

Limits

Rule Part 27.53(h) specifies that “ for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB”

Rule Part 27.53(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Rule Part 27.53(m) (4)/ specifies that “for BRS and EBS stations. For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section. In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Example:

The limit line is derived from $43 + 10 \log (P)$ dB below the transmitter power P(Watts)

= $P(W) - [43 + 10 \log(P)]$ (dB)

= $[30 + 10 \log (P)]$ (dBm) - $[43 + 10 \log(P)]$ (dB) = -13dBm.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=0.684$ dB.



Test Result

All the test traces in the plots shows the test results clearly.

Original

WCDMA Band IV CH-Low

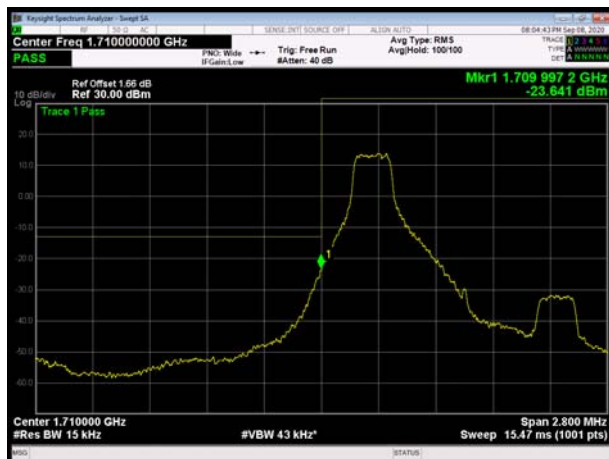


WCDMA Band IV CH-High



Original

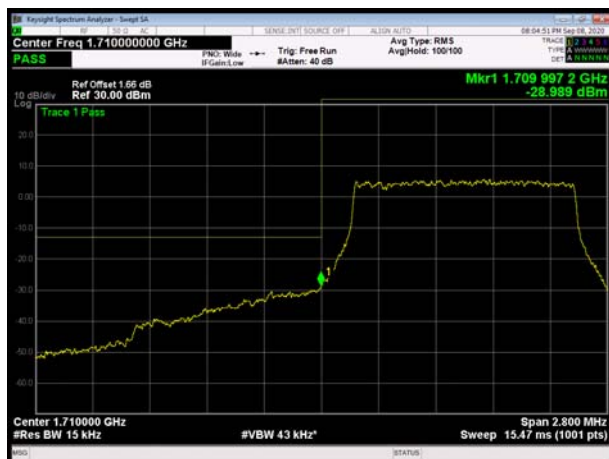
LTE Band 4 QPSK 1.4MHz CH-Low, 1 RB



LTE Band 4 QPSK 1.4MHz CH-High, 1 RB



LTE Band 4 QPSK 1.4MHz CH-Low, 100%RB



LTE Band 4 QPSK 1.4MHz CH-High, 100%RB

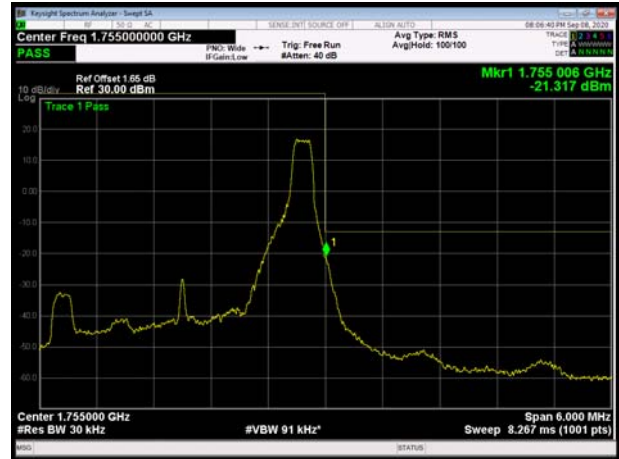




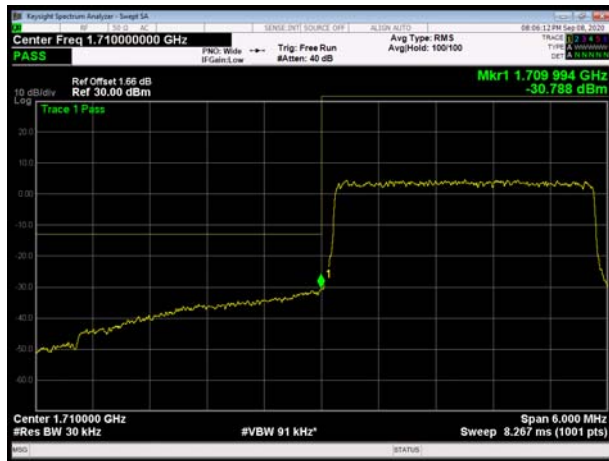
LTE Band 4 QPSK 3MHz CH-Low, 1 RB



LTE Band 4 QPSK 3MHz CH-High, 1 RB



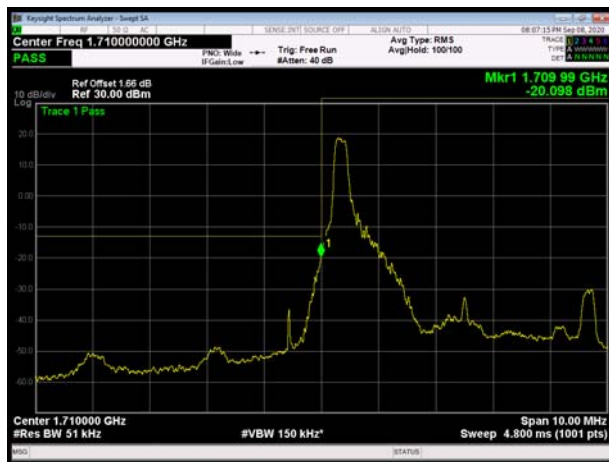
LTE Band 4 QPSK 3MHz CH-Low, 100%RB



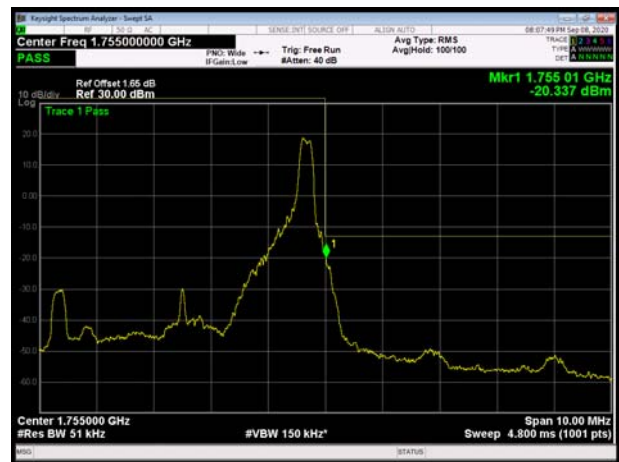
LTE Band 4 QPSK 3MHz CH-High, 100%RB



LTE Band 4 QPSK 5MHz CH-Low, 1 RB

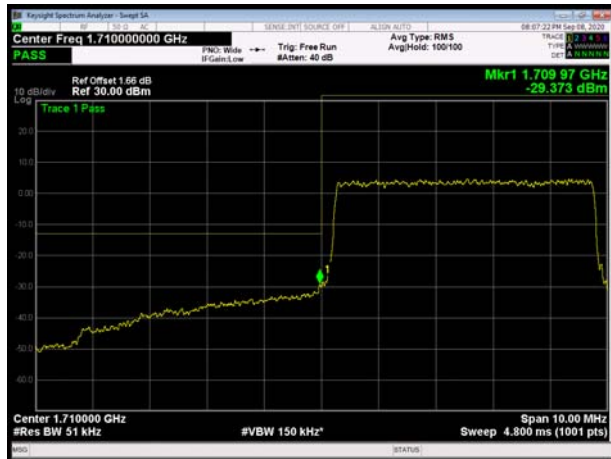


LTE Band 4 QPSK 5MHz CH-High, 1 RB





LTE Band 4 QPSK 5MHz CH-Low, 100%RB



LTE Band 4 QPSK 5MHz CH-High, 100%RB



LTE Band 4 QPSK 10MHz CH-Low, 1 RB



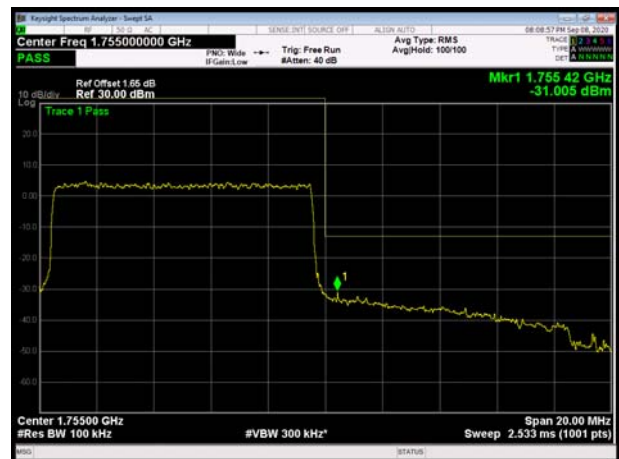
LTE Band 4 QPSK 10MHz CH-High, 1 RB



LTE Band 4 QPSK 10MHz CH-Low, 100%RB

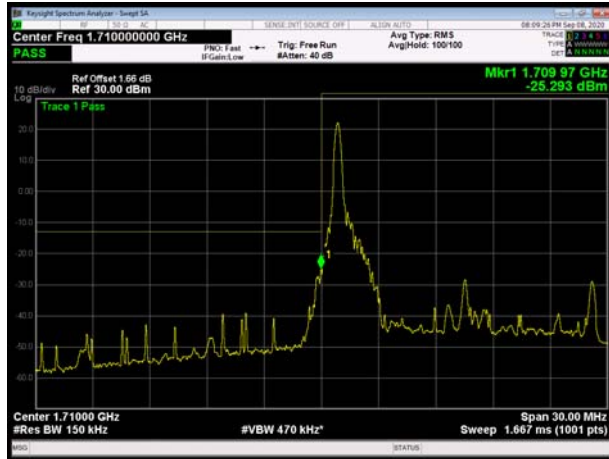


LTE Band 4 QPSK 10MHz CH-High, 100%RB





LTE Band 4 QPSK 15MHz CH-Low, 1 RB



LTE Band 4 QPSK 15MHz CH-High, 1 RB



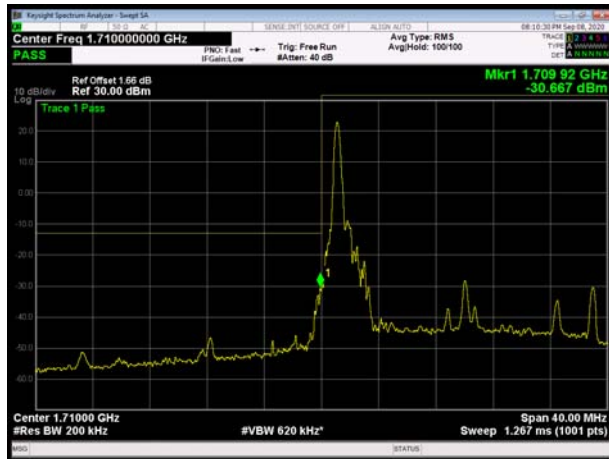
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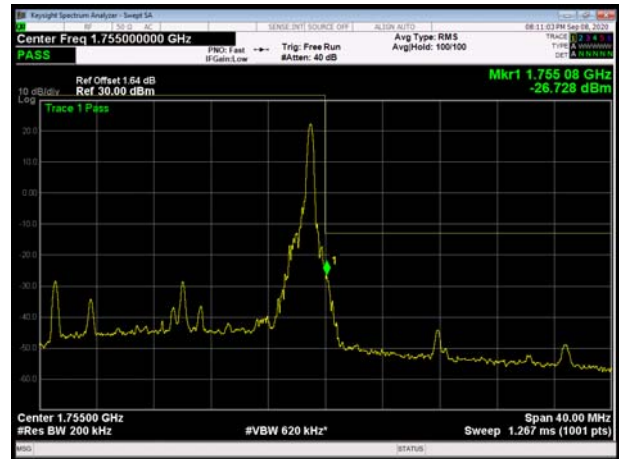
LTE Band 4 QPSK 15MHz CH-High, 100%RB



LTE Band 4 QPSK 20MHz CH-Low, 1 RB

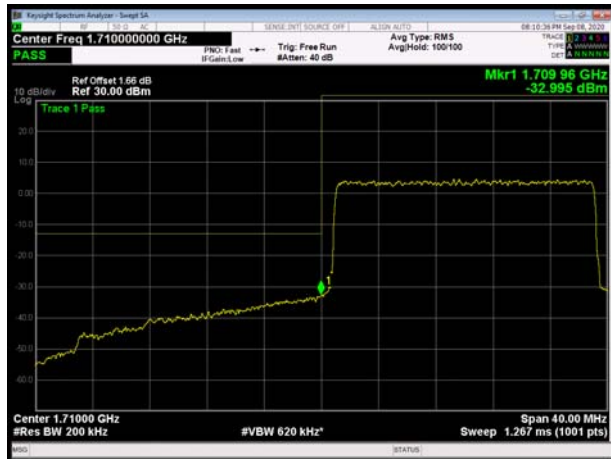


LTE Band 4 QPSK 20MHz CH-High, 1 RB





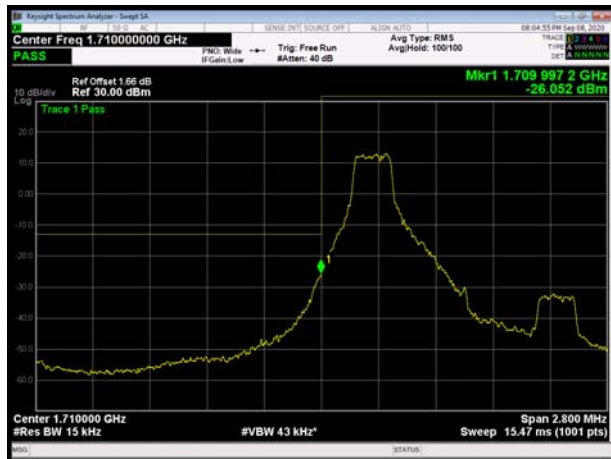
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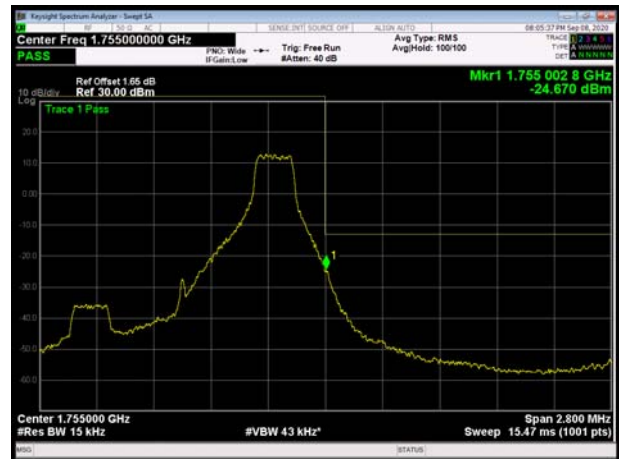
LTE Band 4 QPSK 20MHz CH-High, 100%RB



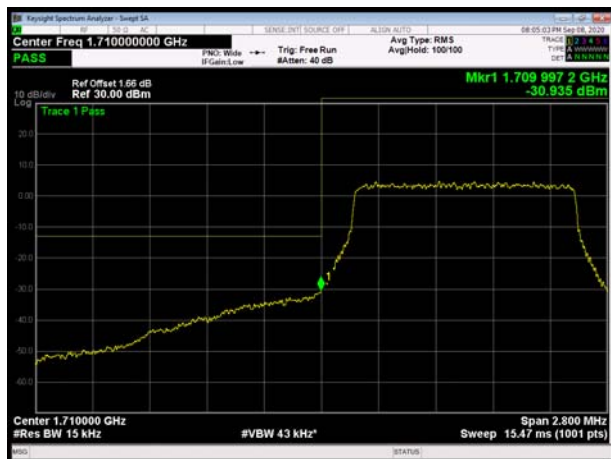
LTE Band 4 16QAM 1.4MHz CH-Low, 1 RB



LTE Band 4 16QAM 1.4MHz CH-High, 1 RB



LTE Band 4 16QAM 1.4MHz CH-Low, 100%RB

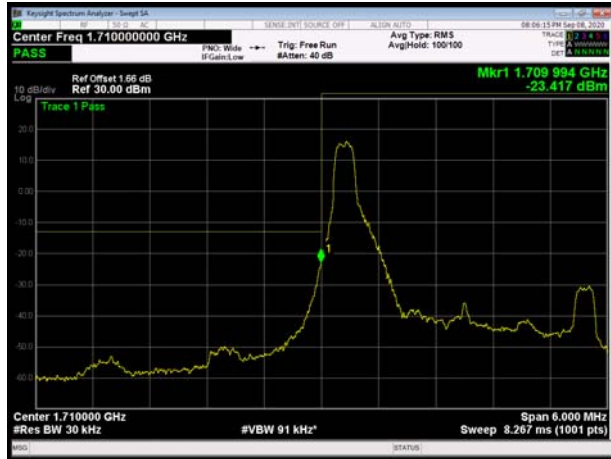


LTE Band 4 16QAM 1.4MHz CH-High, 100%RB

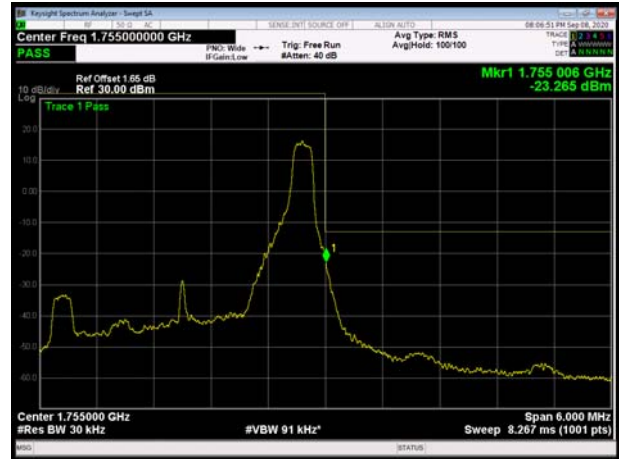




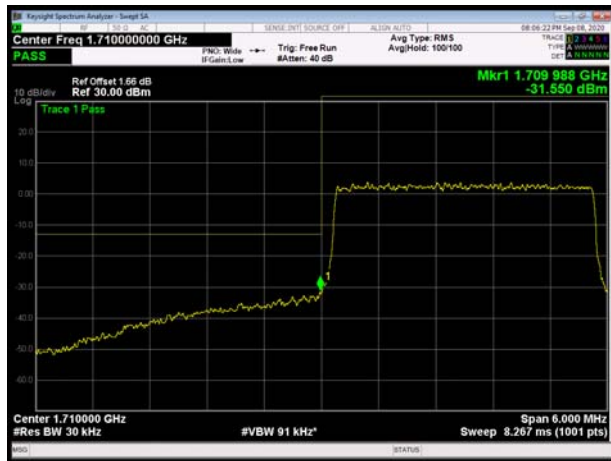
LTE Band 4 16QAM 3MHz CH-Low, 1 RB



LTE Band 4 16QAM 3MHz CH-High, 1 RB



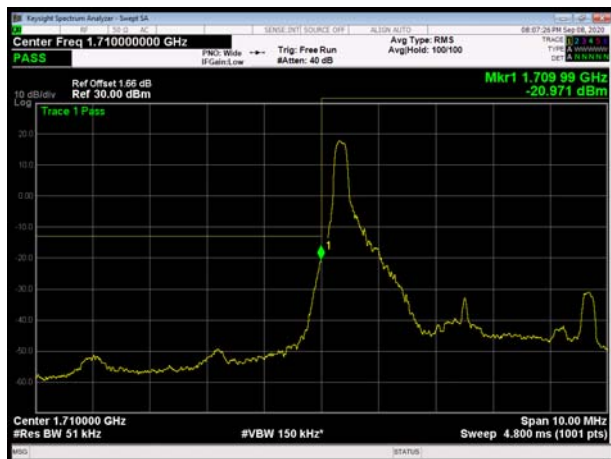
LTE Band 4 16QAM 3MHz CH-Low, 100%RB



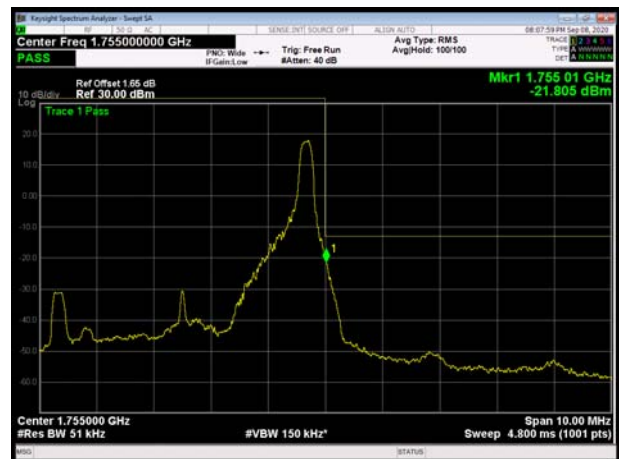
LTE Band 4 16QAM 3MHz CH-High, 100%RB



LTE Band 4 16QAM 5MHz CH-Low, 1 RB

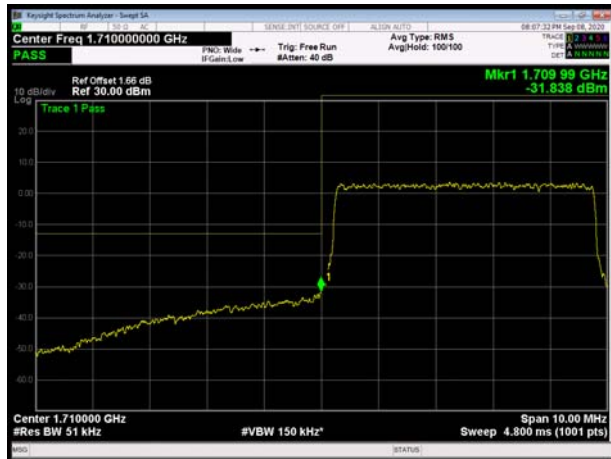


LTE Band 4 16QAM 5MHz CH-High, 1 RB





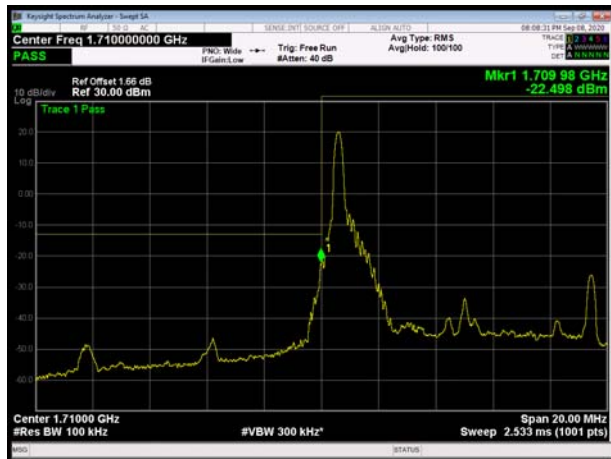
LTE Band 4 16QAM 5MHz CH-Low, 100%RB



LTE Band 4 16QAM 5MHz CH-High, 100%RB



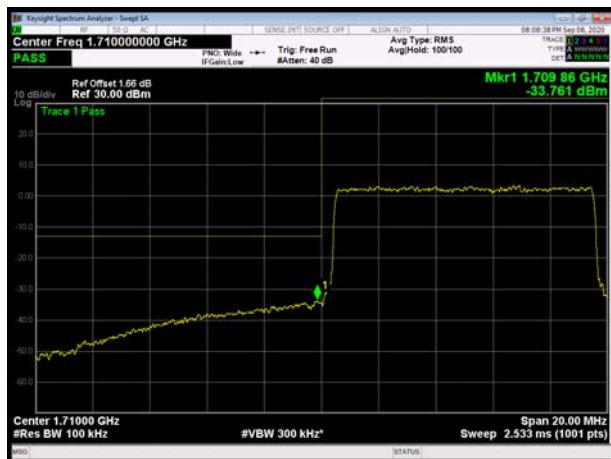
LTE Band 4 16QAM 10MHz CH-Low, 1 RB



LTE Band 4 16QAM 10MHz CH-High, 1 RB



LTE Band 4 16QAM 10MHz CH-Low, 100%RB

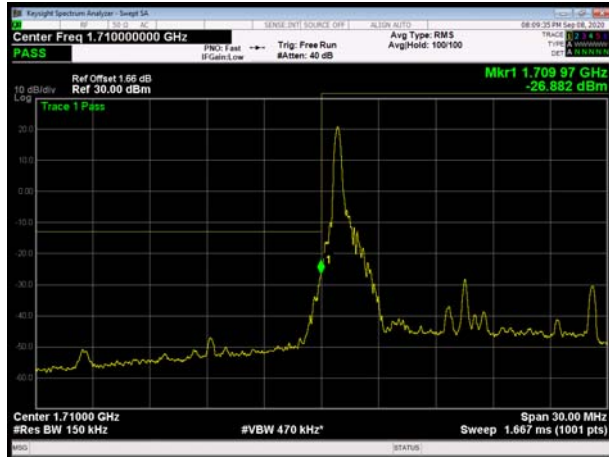


LTE Band 4 16QAM 10MHz CH-High, 100%RB

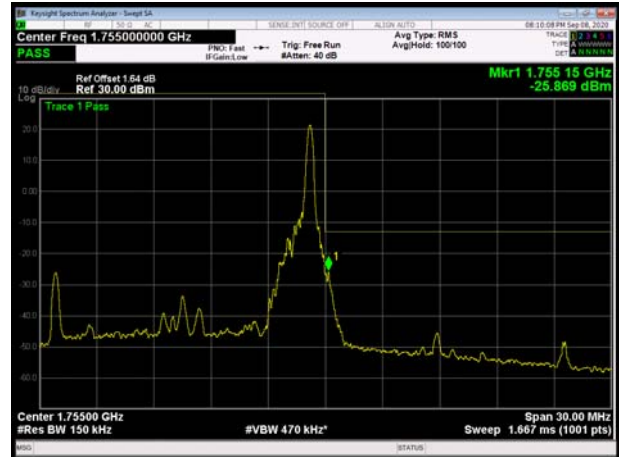




LTE Band 4 16QAM 15MHz CH-Low, 1 RB



LTE Band 4 16QAM 15MHz CH-High, 1 RB



LTE Band 4 16QAM 15MHz CH-Low, 100%RB



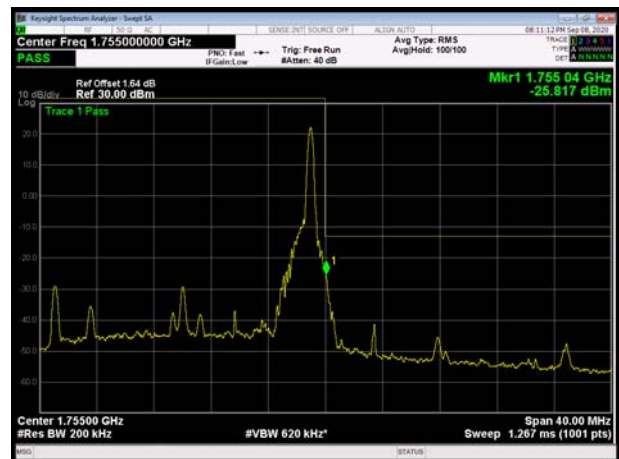
LTE Band 4 16QAM 15MHz CH-High, 100%RB



LTE Band 4 16QAM 20MHz CH-Low, 1 RB

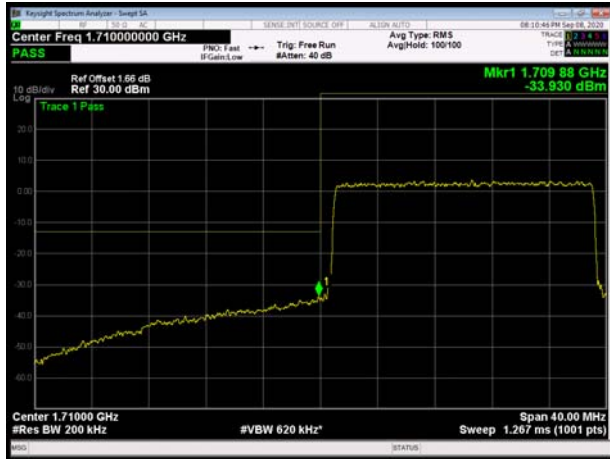


LTE Band 4 16QAM 20MHz CH-High, 1 RB





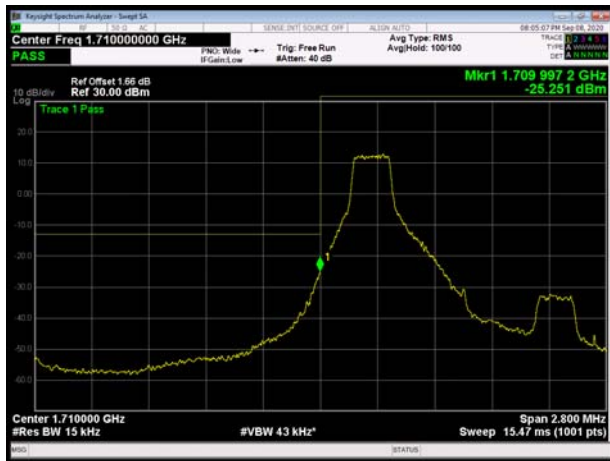
LTE Band 4 16QAM 20MHz CH-Low, 100%RB



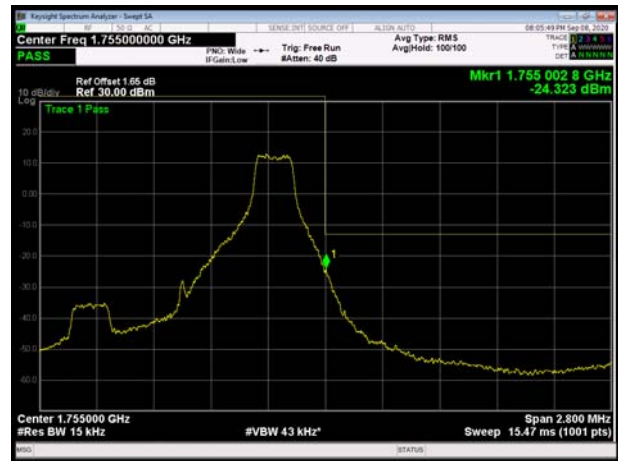
LTE Band 4 16QAM 20MHz CH-High, 100%RB



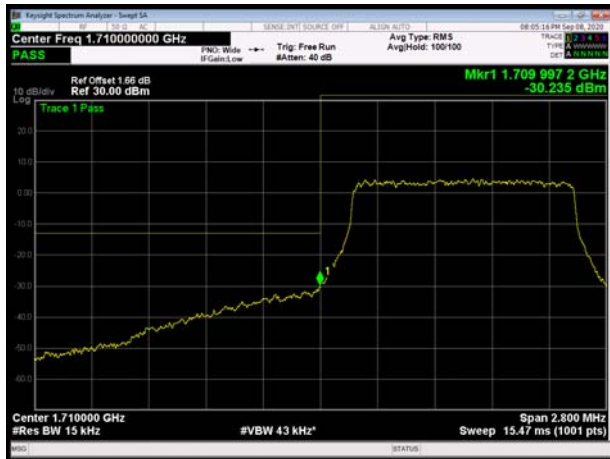
LTE Band 4 64QAM 1.4MHz CH-Low, 1 RB



LTE Band 4 64QAM 1.4MHz CH-High, 1 RB



LTE Band 4 64QAM 1.4MHz CH-Low, 100%RB

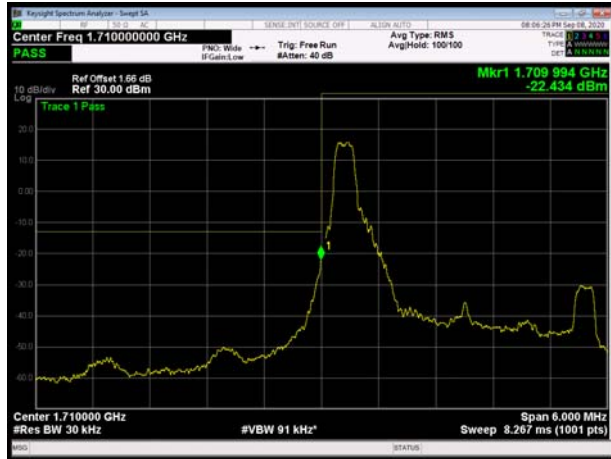


LTE Band 4 64QAM 1.4MHz CH-High, 100%RB

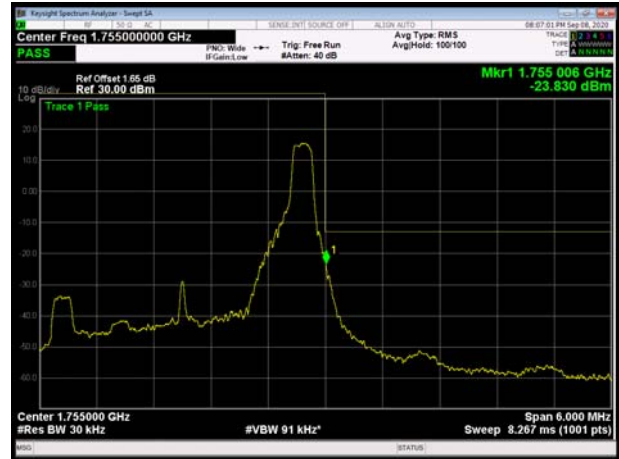




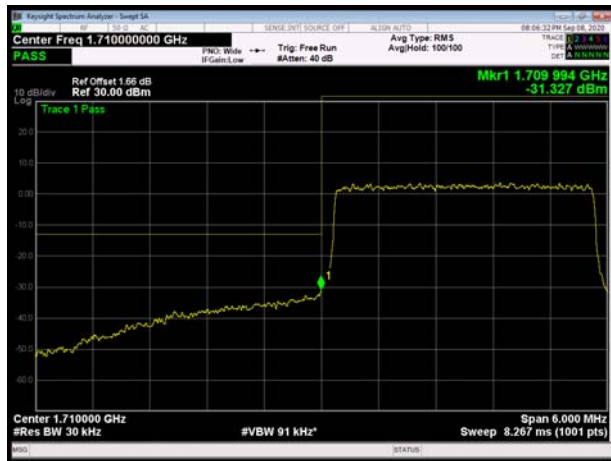
LTE Band 4 64QAM 3MHz CH-Low, 1 RB



LTE Band 4 64QAM 3MHz CH-High, 1 RB



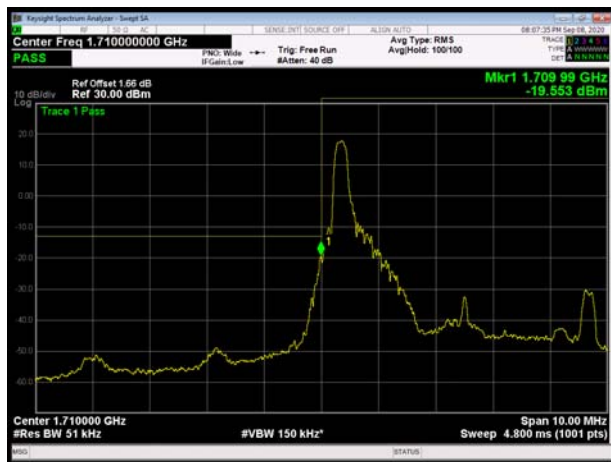
LTE Band 4 64QAM 3MHz CH-Low, 100%RB



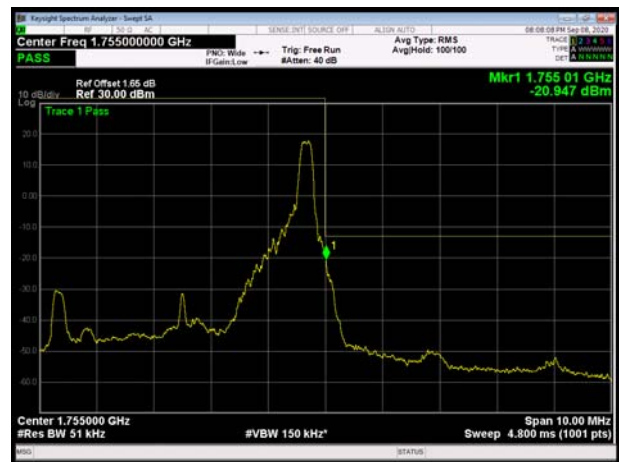
LTE Band 4 64QAM 3MHz CH-High, 100%RB



LTE Band 4 64QAM 5MHz CH-Low, 1 RB

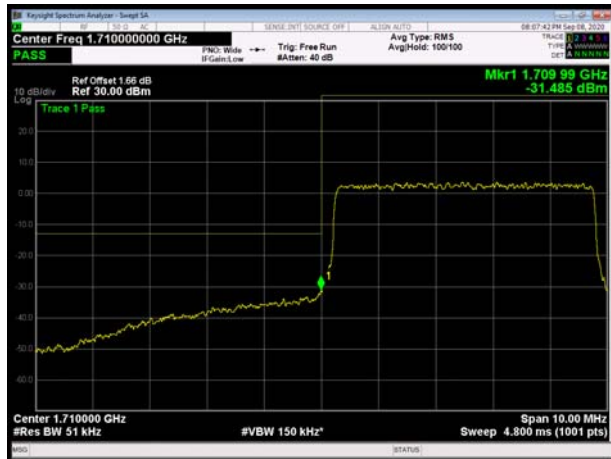


LTE Band 4 64QAM 5MHz CH-High, 1 RB





LTE Band 4 64QAM 5MHz CH-Low, 100%RB



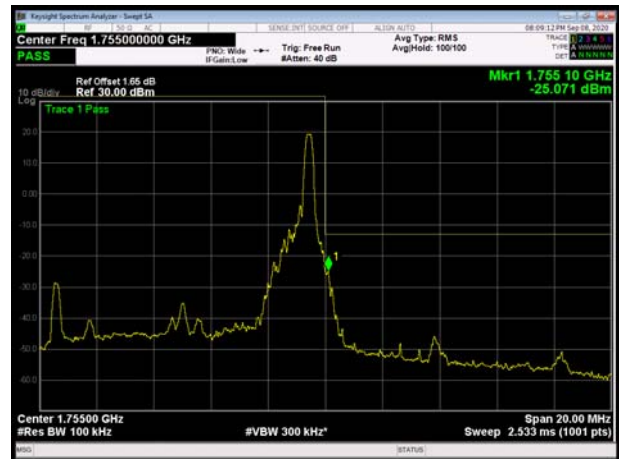
LTE Band 4 64QAM 5MHz CH-High, 100%RB



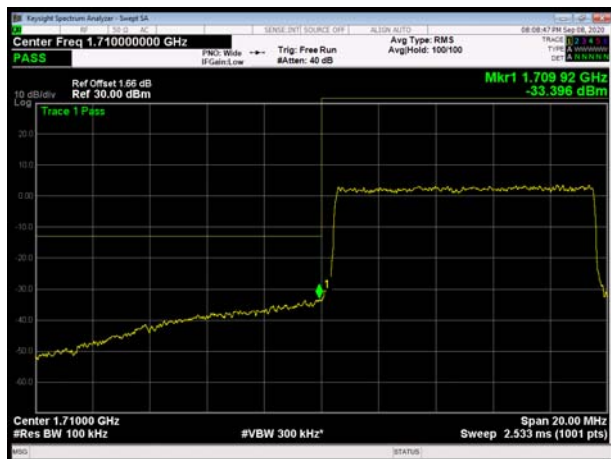
LTE Band 4 64QAM 10MHz CH-Low, 1 RB



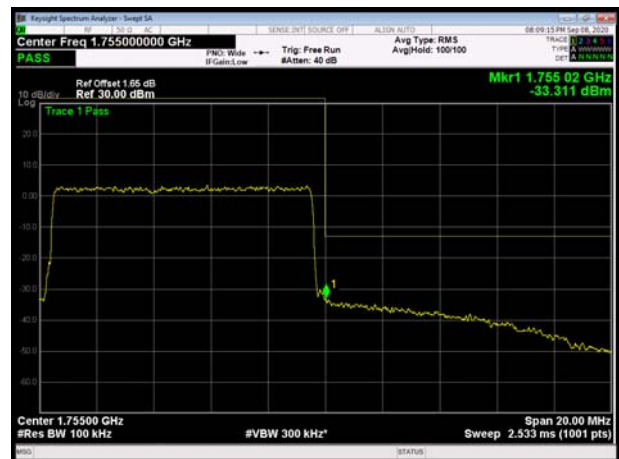
LTE Band 4 64QAM 10MHz CH-High, 1 RB



LTE Band 4 64QAM 10MHz CH-Low, 100%RB

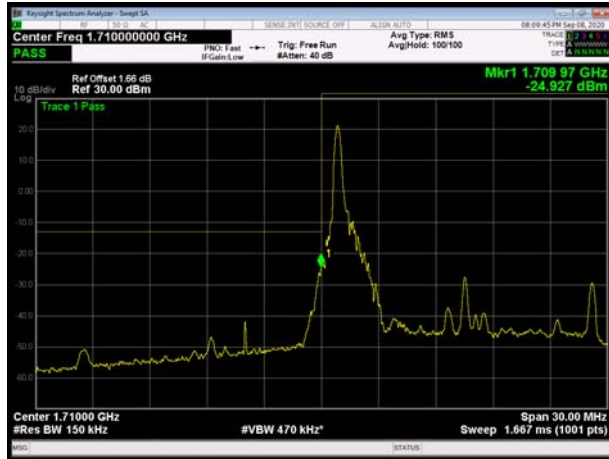


LTE Band 4 64QAM 10MHz CH-High, 100%RB

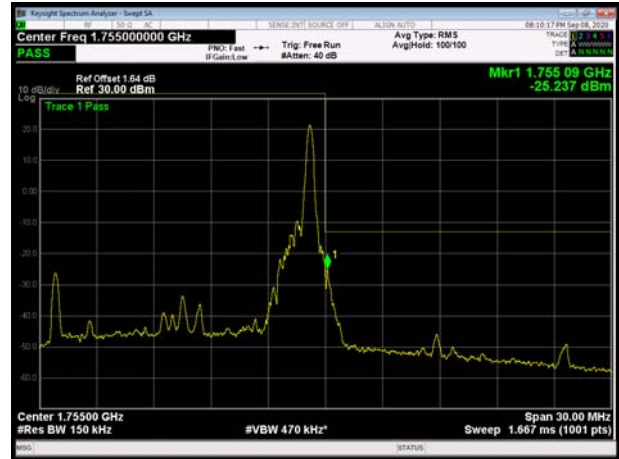




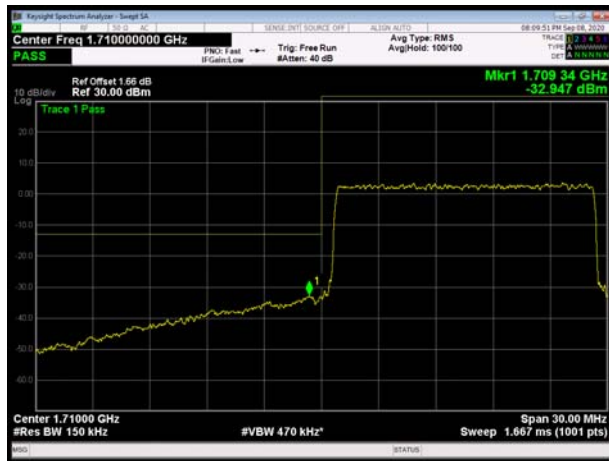
LTE Band 4 64QAM 15MHz CH-Low, 1 RB



LTE Band 4 64QAM 15MHz CH-High, 1 RB



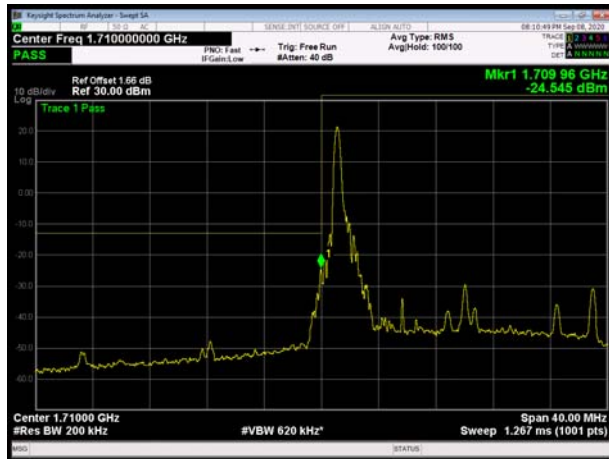
LTE Band 4 64QAM 15MHz CH-Low, 100%RB



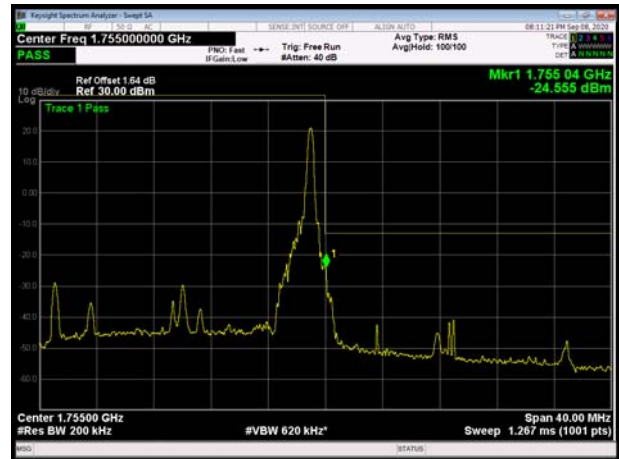
LTE Band 4 64QAM 15MHz CH-High, 100%RB



LTE Band 4 64QAM 20MHz CH-Low, 1 RB

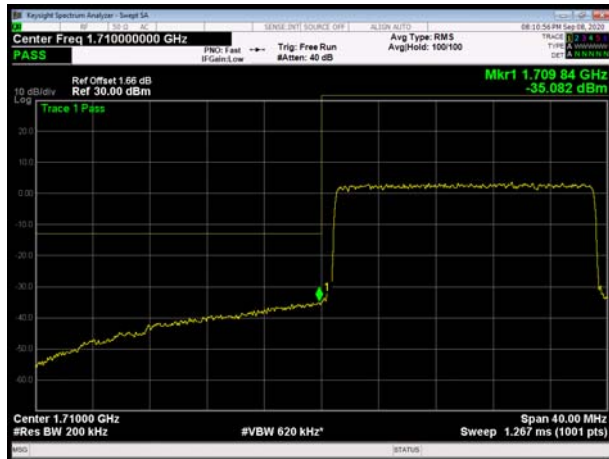


LTE Band 4 64QAM 20MHz CH-High, 1 RB





LTE Band 4 64QAM 20MHz CH-Low, 100%RB

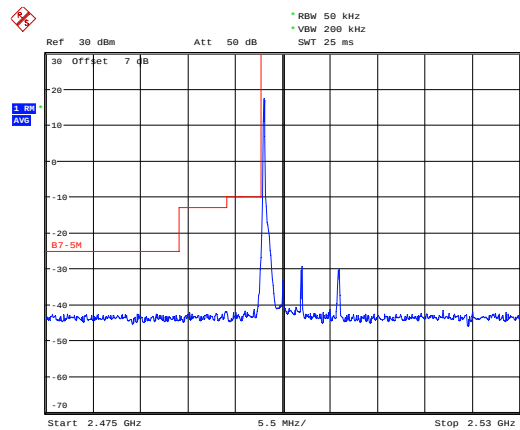


LTE Band 4 64QAM 20MHz CH-High, 100%RB



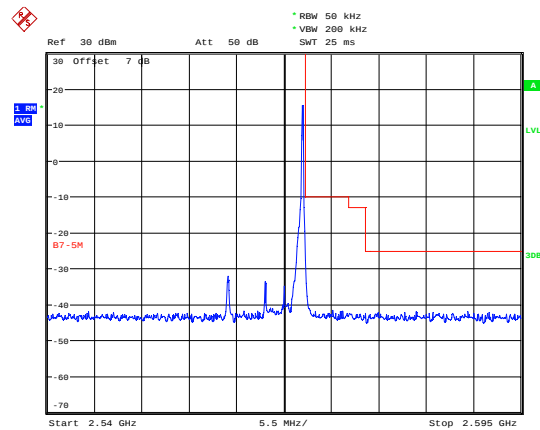
Variant

LTE Band 7 QPSK 5MHz CH-Low, 1 RB



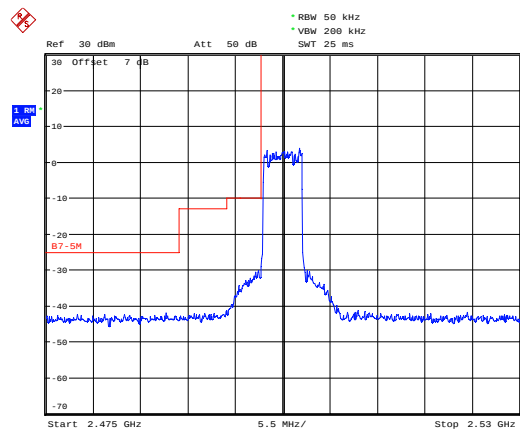
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LTE Band 7 QPSK 5MHz CH-High, 1 RB



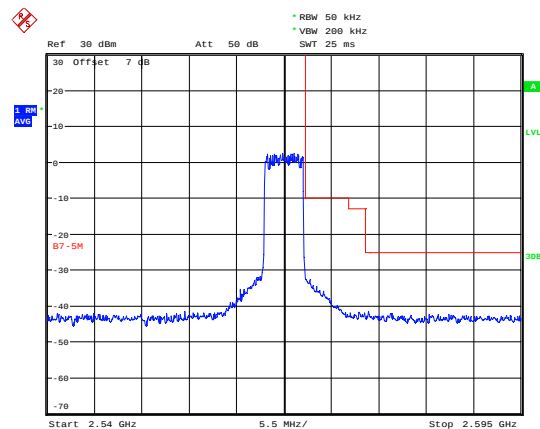
Date: 15.SEP.2020 19:59:25

LTE Band 7 QPSK 5MHz CH-Low, 100%RB



Date: 15.SEP.2020 19:51:44

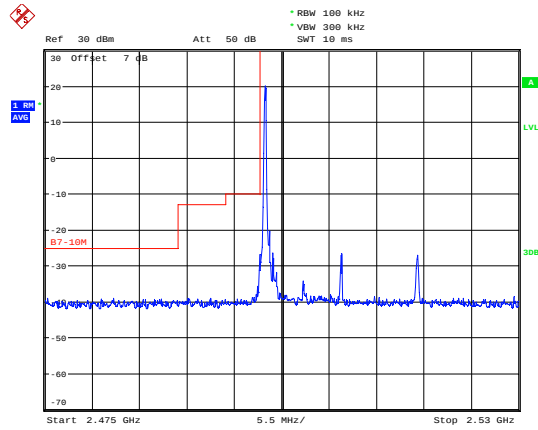
LTE Band 7 QPSK 5MHz CH-High, 100%RB



Date: 15.SEP.2020 19:59:37

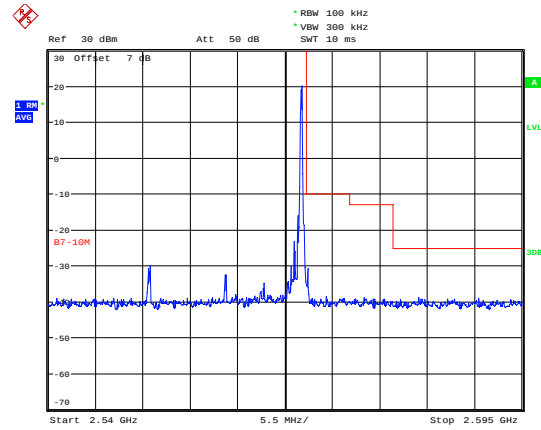


LTE Band 7 QPSK 10MHz CH-Low, 1 RB



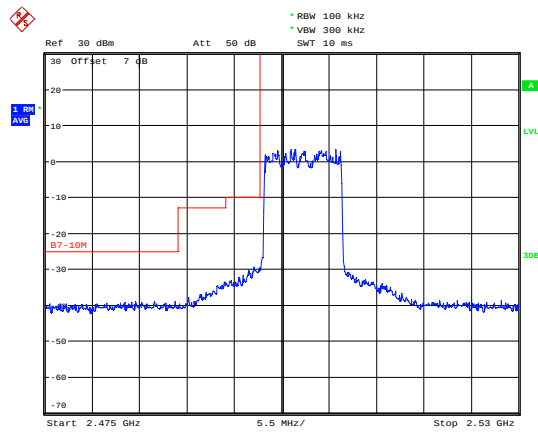
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LTE Band 7 QPSK 10MHz CH-High, 1 RB



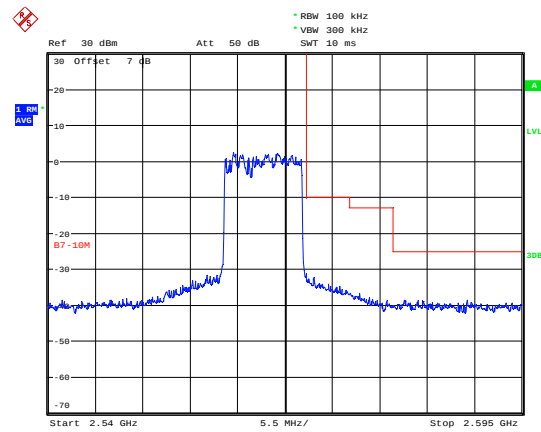
Date: 15.SEP.2020 20:01:06

LTE Band 7 QPSK 10MHz CH-Low, 100%RB



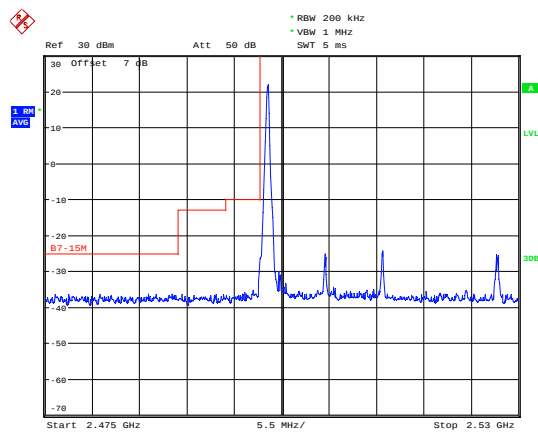
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LTE Band 7 QPSK 10MHz CH-High, 100%RB



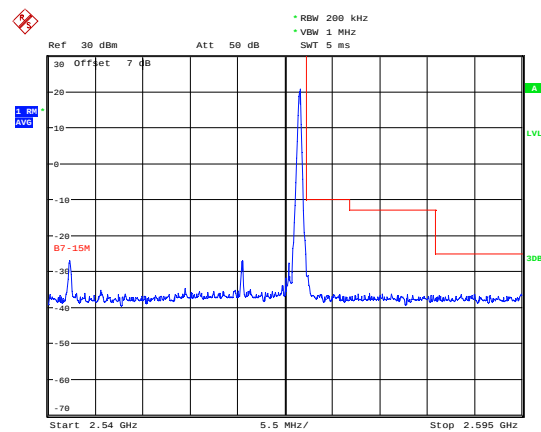
Date: 15.SEP.2020 20:01:24

LTE Band 7 QPSK 15MHz CH-Low, 1 RB



Date: 15.SEP.2020 19:55:03

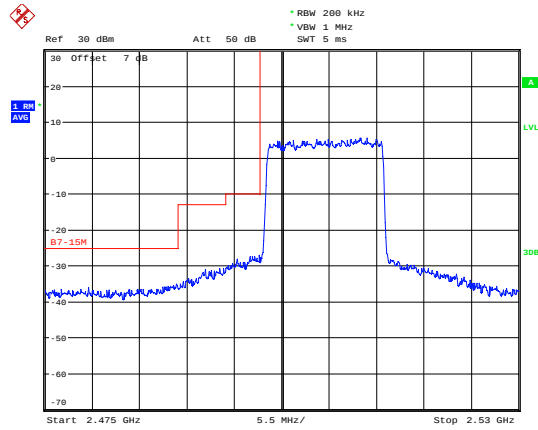
LTE Band 7 QPSK 15MHz CH-High, 1 RB



Date: 15.SEP.2020 20:04:03

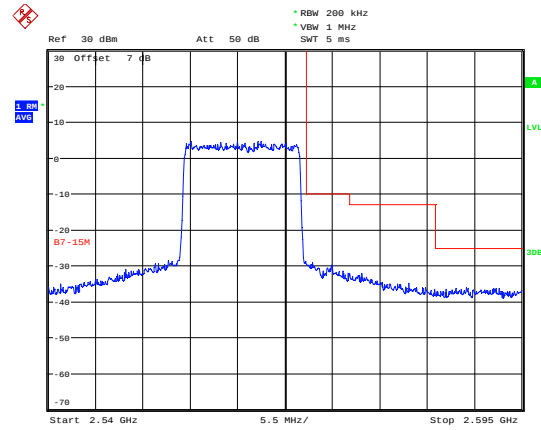


LTE Band 7 QPSK 15MHz CH-Low, 100%RB



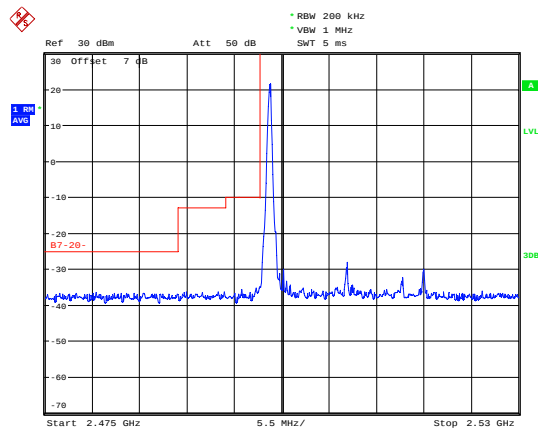
Date: 15.SEP.2020 19:55:14

LTE Band 7 QPSK 15MHz CH-High, 100%RB



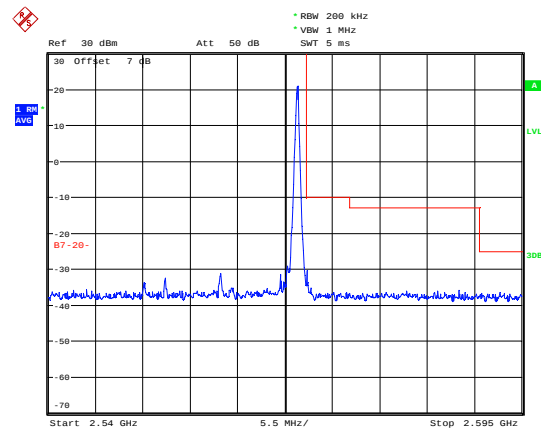
Date: 15.SEP.2020 20:04:16

LTE Band 7 QPSK 20MHz CH-Low, 1 RB



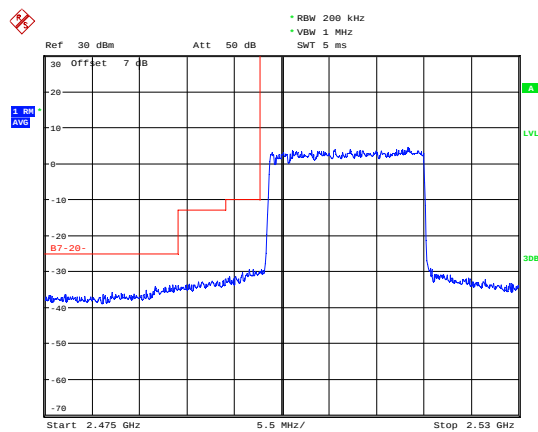
Date: 15.SEP.2020 19:57:20

LTE Band 7 QPSK 20MHz CH-High, 1 RB



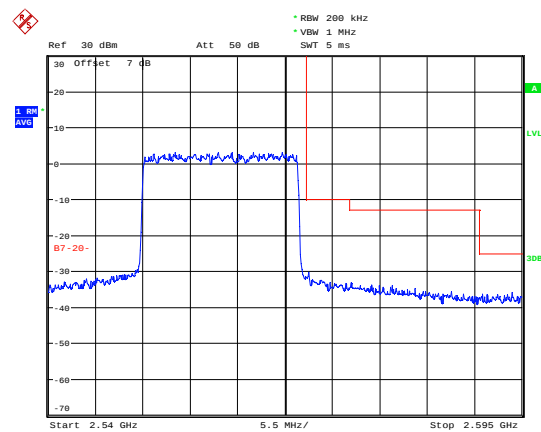
Date: 15.SEP.2020 20:07:31

LTE Band 7 QPSK 20MHz CH-Low, 100%RB



Date: 15.SEP.2020 19:57:29

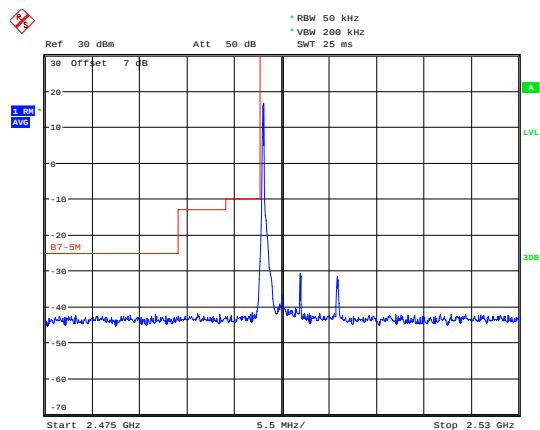
LTE Band 7 QPSK 20MHz CH-High, 100%RB



Date: 15.SEP.2020 20:07:44

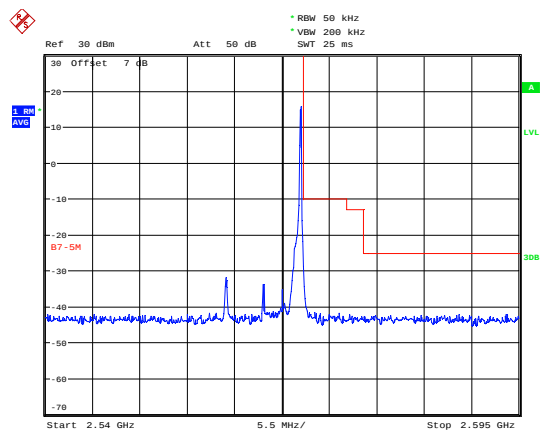


LTE Band 7 16QAM 5MHz CH-Low, 1 RB



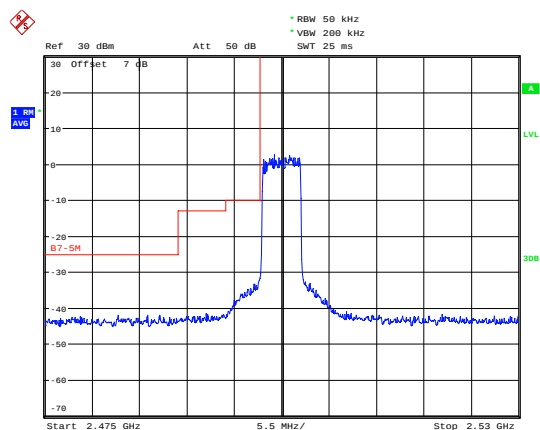
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LTE Band 7 16QAM 5MHz CH-High, 1 RB



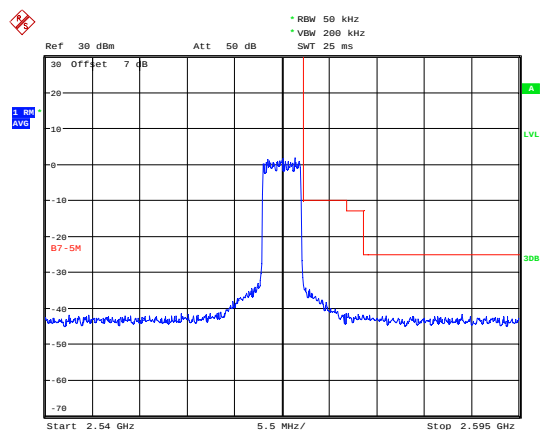
Date: 15.SEP.2020 19:59:48

LTE Band 7 16QAM 5MHz CH-Low, 100%RB



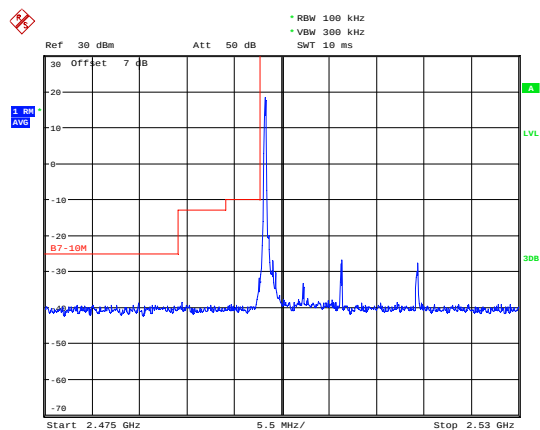
Date: 15.SEP.2020 19:52:07

LTE Band 7 16QAM 5MHz CH-High, 100%RB



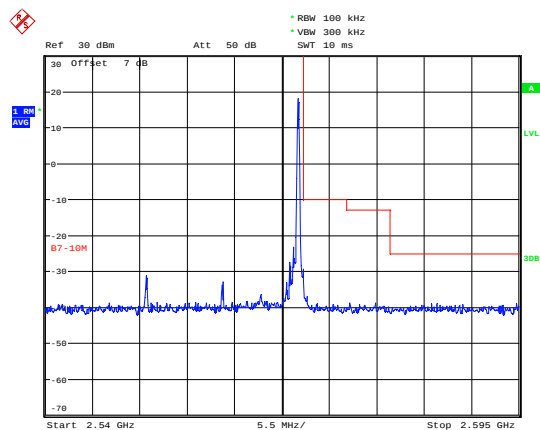
Date: 15.SEP.2020 19:59:59

LTE Band 7 16QAM 10MHz CH-Low, 1 RB



Date: 15.SEP.2020 19:53:41

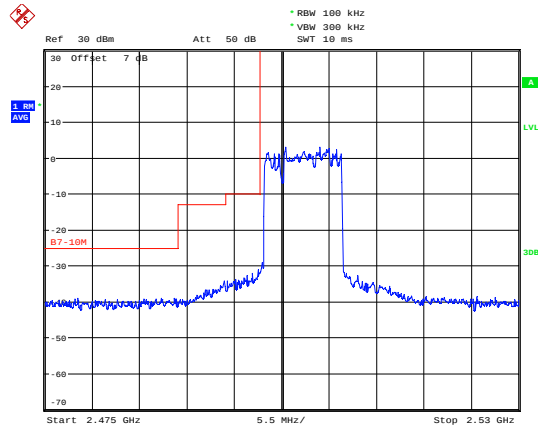
LTE Band 7 16QAM 10MHz CH-High, 1 RB



Date: 15.SEP.2020 20:01:36

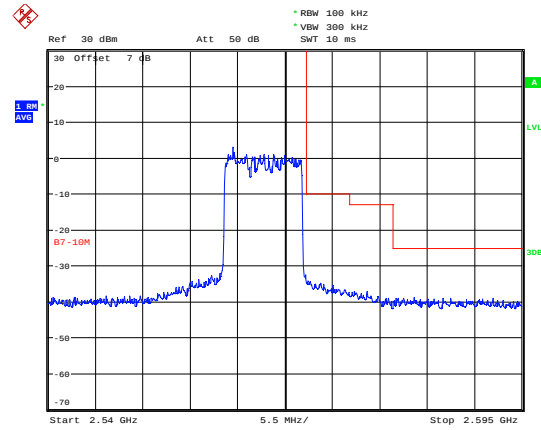


LTE Band 7 16QAM 10MHz CH-Low, 100%RB



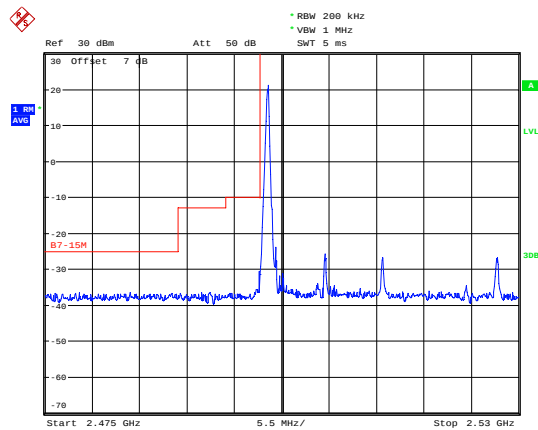
Date: 15.SEP.2020 19:53:51

LTE Band 7 16QAM 10MHz CH-High, 100%RB



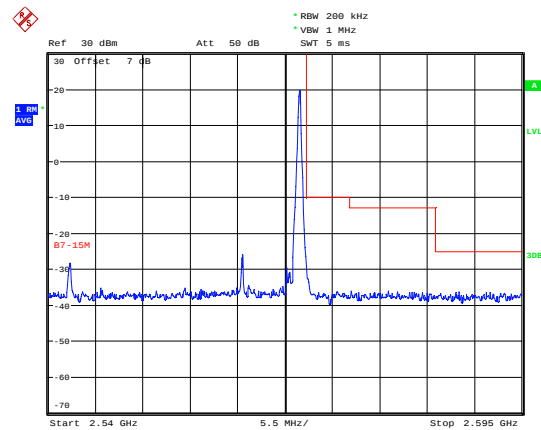
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LTE Band 7 16QAM 15MHz CH-Low, 1 RB



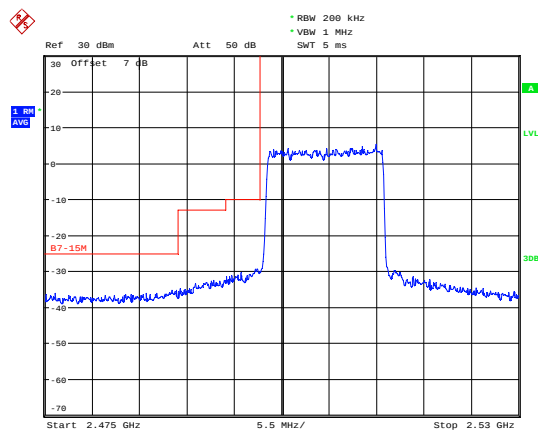
Date: 15.SEP.2020 19:55:25

LTE Band 7 16QAM 15MHz CH-High, 1 RB



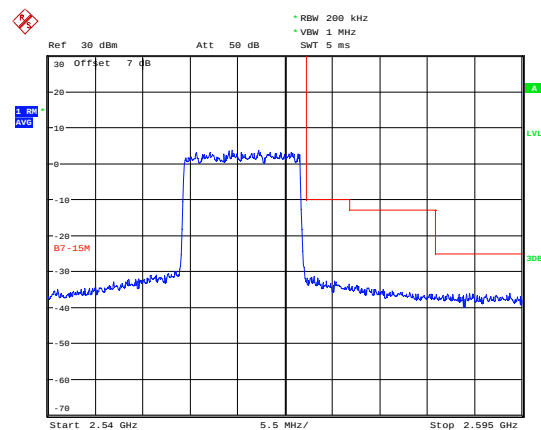
Date: 15.SEP.2020 20:04:28

LTE Band 7 16QAM 15MHz CH-Low, 100%RB



Date: 15.SEP.2020 19:55:36

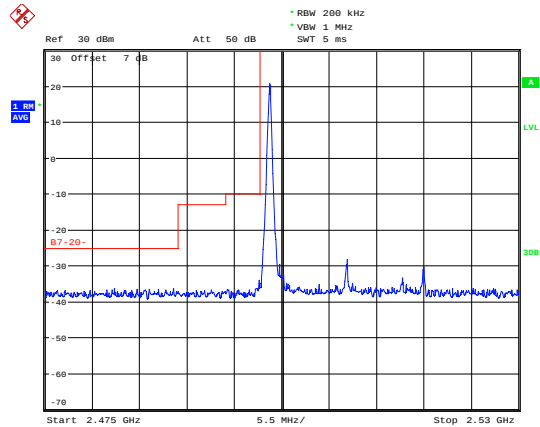
LTE Band 7 16QAM 15MHz CH-High, 100%RB



Date: 15.SEP.2020 20:04:37

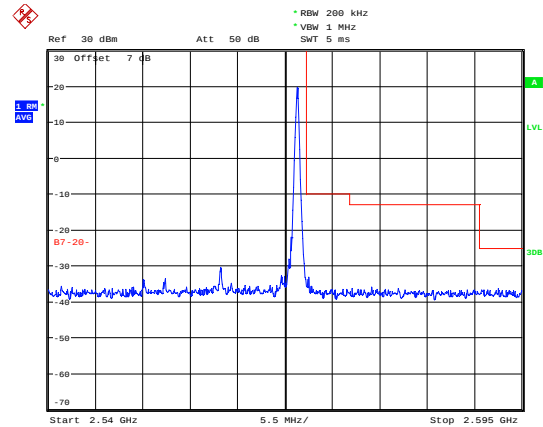


LTE Band 7 16QAM 20MHz CH-Low, 1 RB



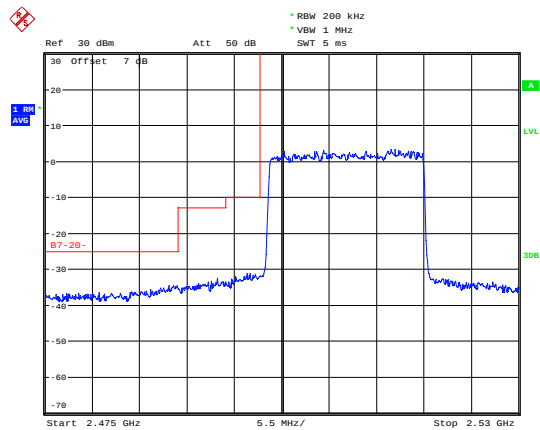
Date: 15.SEP.2020 19:57:41

LTE Band 7 16QAM 20MHz CH-High, 1 RB



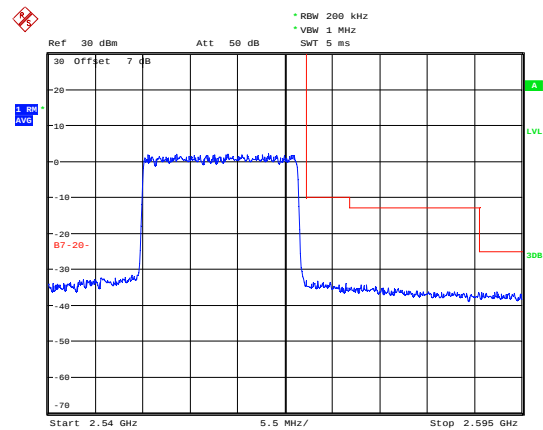
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LTE Band 7 16QAM 20MHz CH-Low, 100%RB



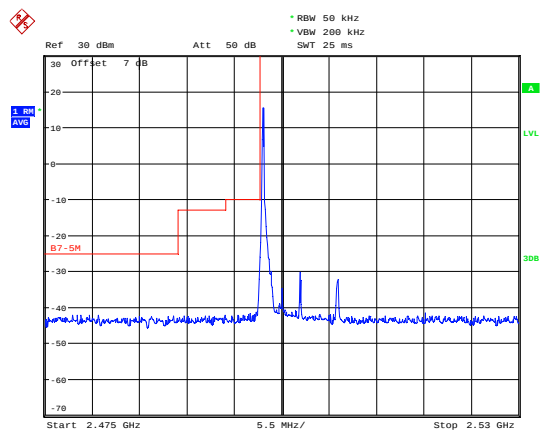
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LTE Band 7 16QAM 20MHz CH-High, 100%RB



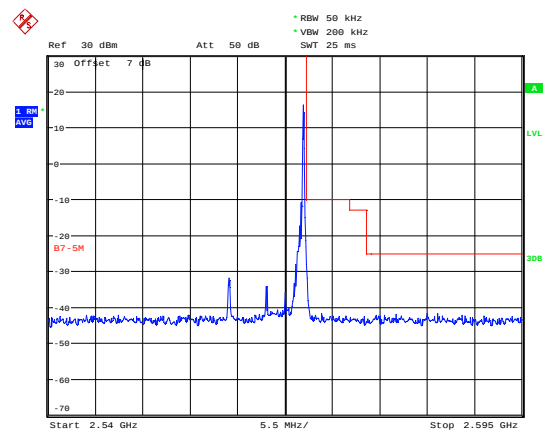
Date: 15.SEP.2020 20:08:06

LTE Band 7 64QAM 5MHz CH-Low, 1 RB



Date: 15.SEP.2020 19:52:17

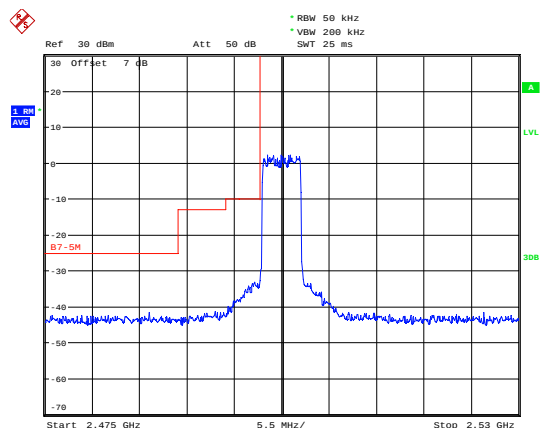
LTE Band 7 64QAM 5MHz CH-High, 1 RB



Date: 15.SEP.2020 20:00:09

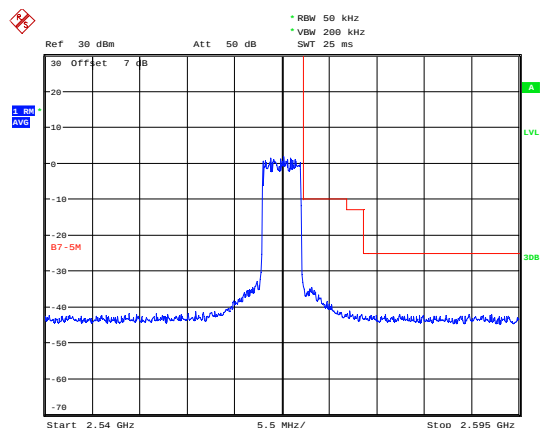


LTE Band 7 64QAM 5MHz CH-Low, 100%RB



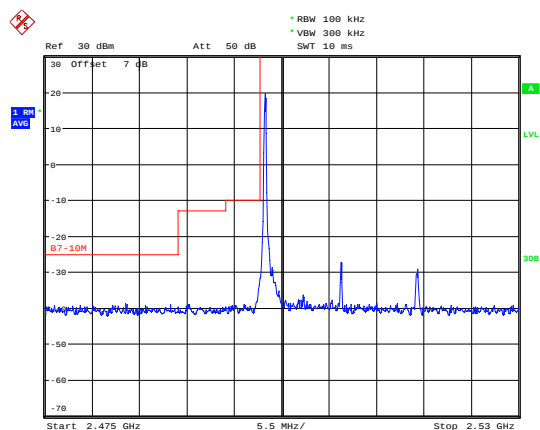
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LTE Band 7 64QAM 5MHz CH-High, 100%RB



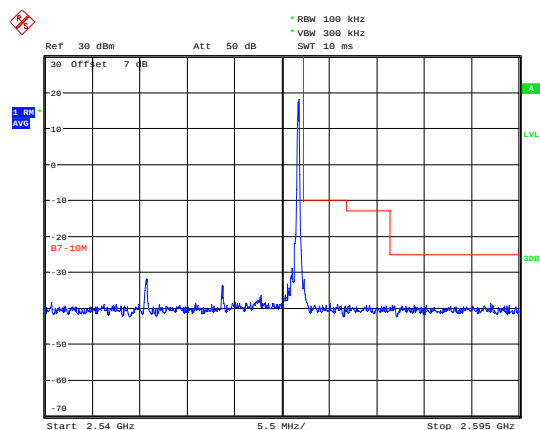
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LTE Band 7 64QAM 10MHz CH-Low, 1 RB



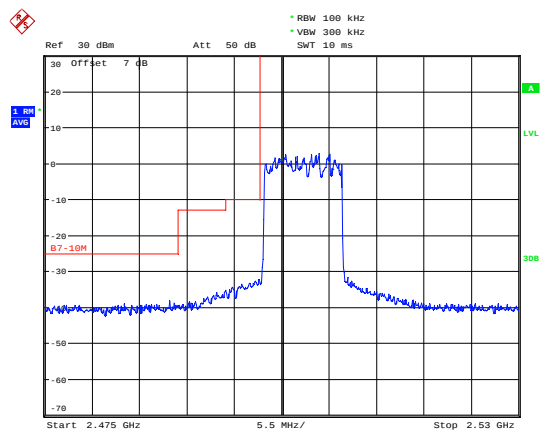
Date: 15.SEP.2020 19:54:02

LTE Band 7 64QAM 10MHz CH-High, 1 RB



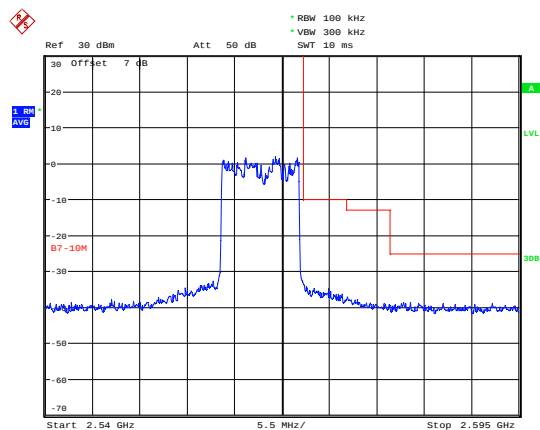
Date: 15.SEP.2020 20:01:58

LTE Band 7 64QAM 10MHz CH-Low, 100%RB



Date: 15.SEP.2020 19:54:12

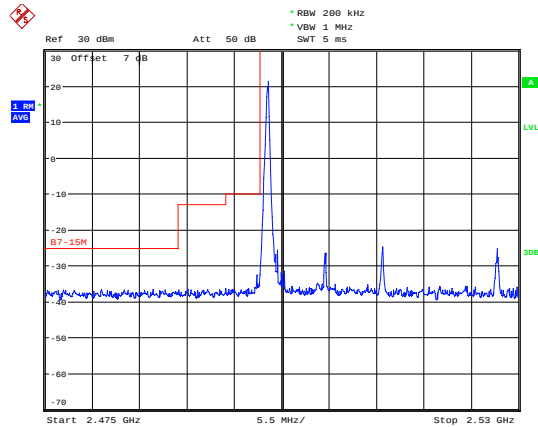
LTE Band 7 64QAM 10MHz CH-High, 100%RB



Date: 15.SEP.2020 20:02:07

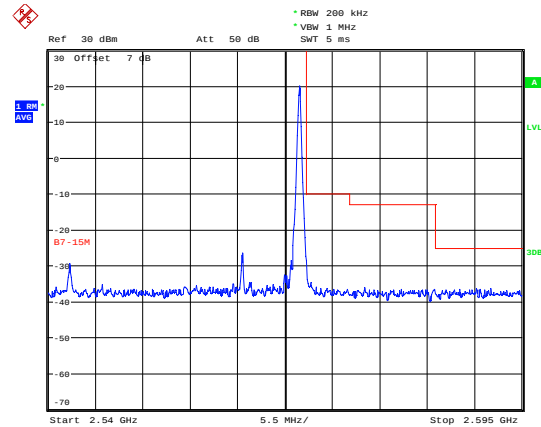


LTE Band 7 64QAM 15MHz CH-Low, 1 RB



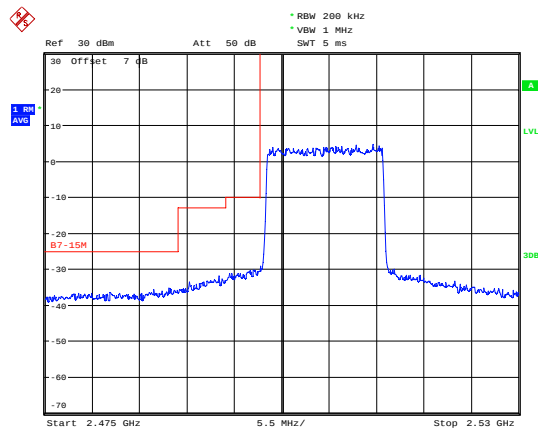
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LTE Band 7 64QAM 15MHz CH-High, 1 RB



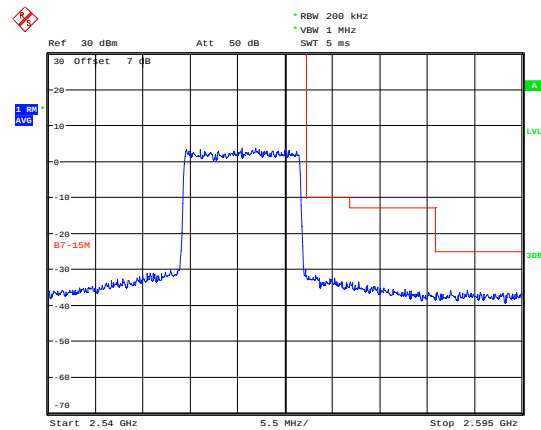
Date: 15.SEP.2020 20:04:48

LTE Band 7 64QAM 15MHz CH-Low, 100%RB



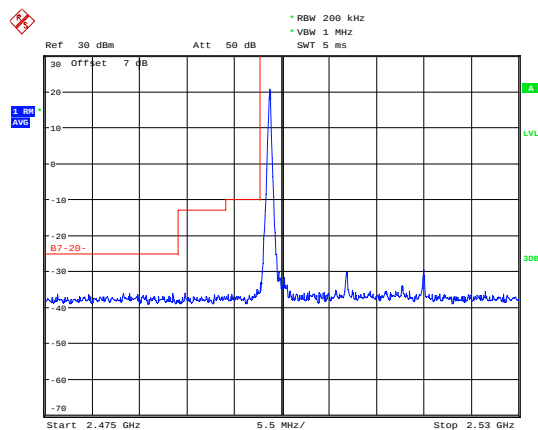
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LTE Band 7 64QAM 15MHz CH-High, 100%RB



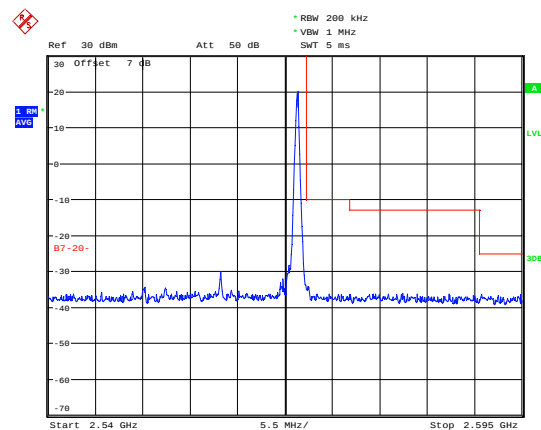
Date: 15.SEP.2020 20:04:59

LTE Band 7 64QAM 20MHz CH-Low, 1 RB



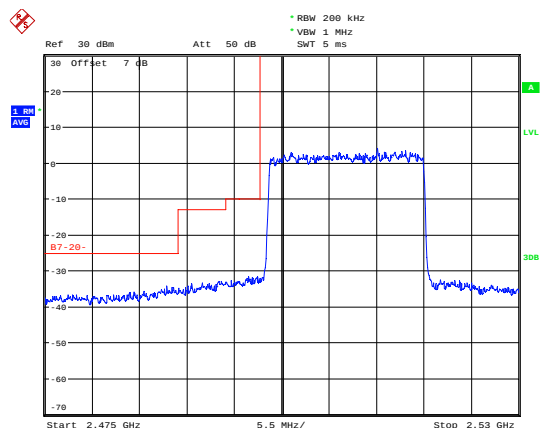
Date: 15.SEP.2020 19:58:01

LTE Band 7 64QAM 20MHz CH-High, 1 RB



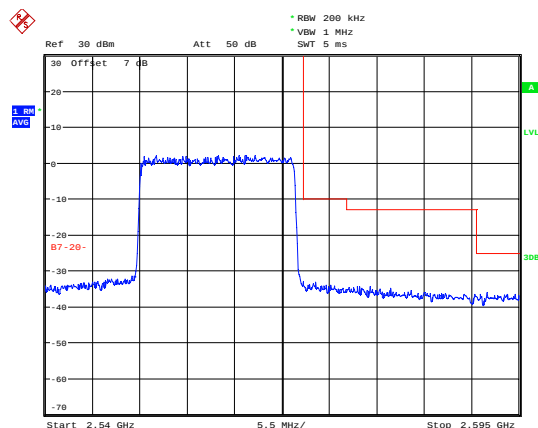
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LTE Band 7 64QAM 20MHz CH-Low, 100%RB



Date: 15-SEP-2020 19:58:11

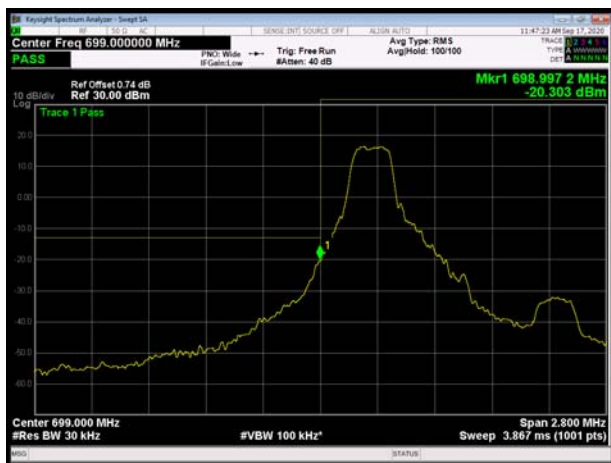
LTE Band 7 64QAM 20MHz CH-High, 100%RB



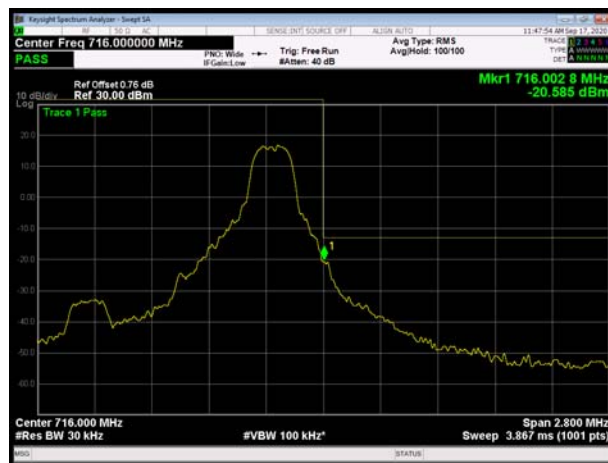
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Variant

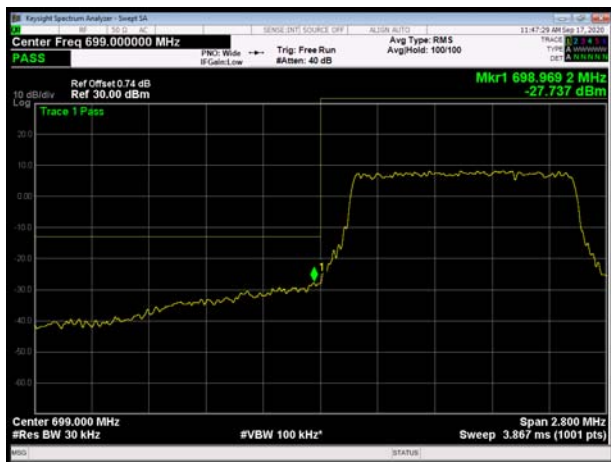
LTE Band 12 QPSK 1.4MHz CH-Low, 1 RB



LTE Band 12 QPSK 1.4MHz CH-High, 1 RB



LTE Band 12 QPSK 1.4MHz CH-Low, 100%RB

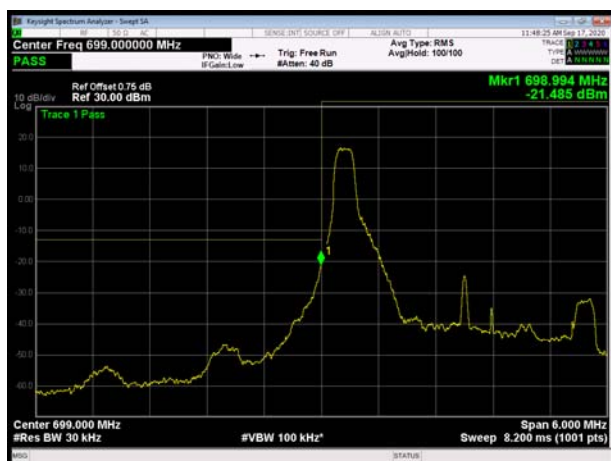


LTE Band 12 QPSK 1.4MHz CH-High, 100%RB

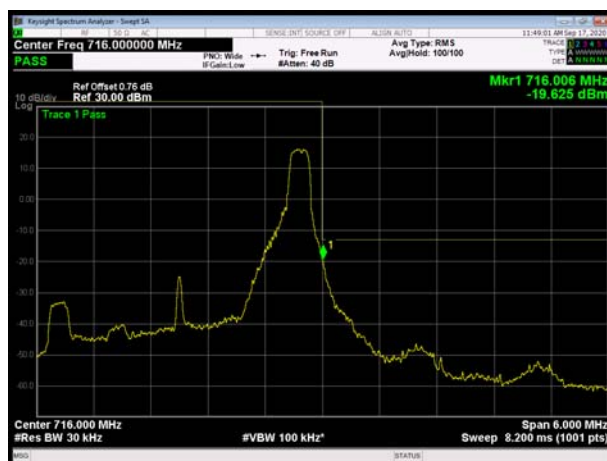




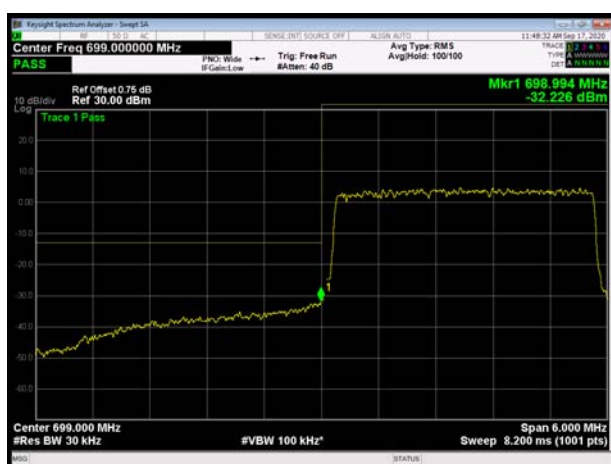
LTE Band 12 QPSK 3MHz CH-Low, 1 RB



LTE Band 12 QPSK 3MHz CH-High, 1 RB



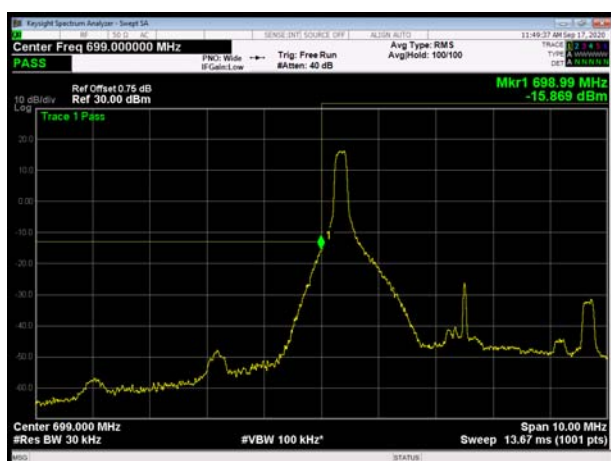
LTE Band 12 QPSK 3MHz CH-Low, 100%RB



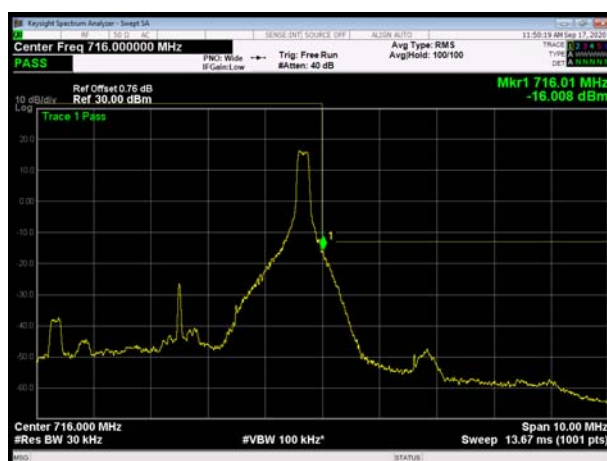
LTE Band 12 QPSK 3MHz CH-High, 100%RB



LTE Band 12 QPSK 5MHz CH-Low, 1 RB

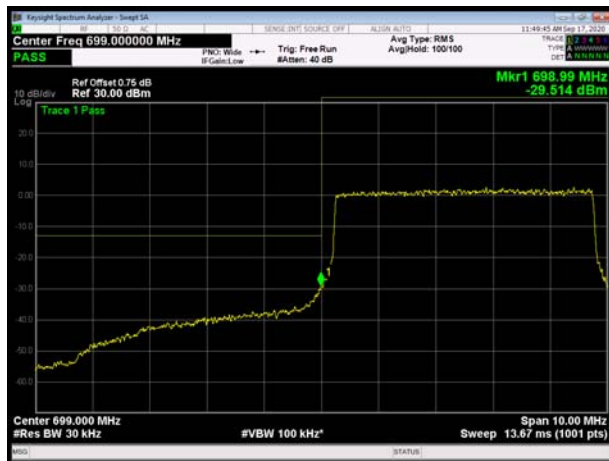


LTE Band 12 QPSK 5MHz CH-High, 1 RB





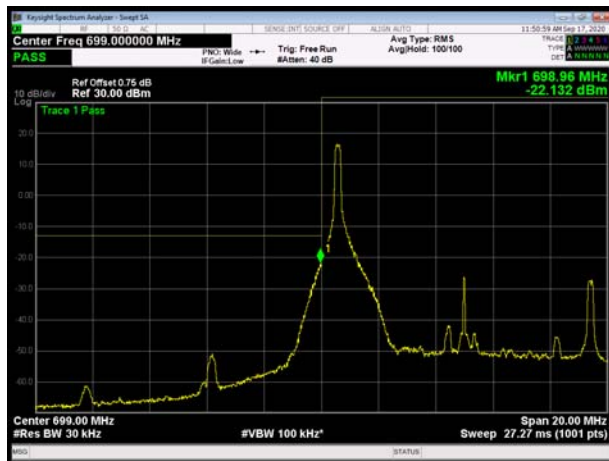
LTE Band 12 QPSK 5MHz CH-Low, 100%RB



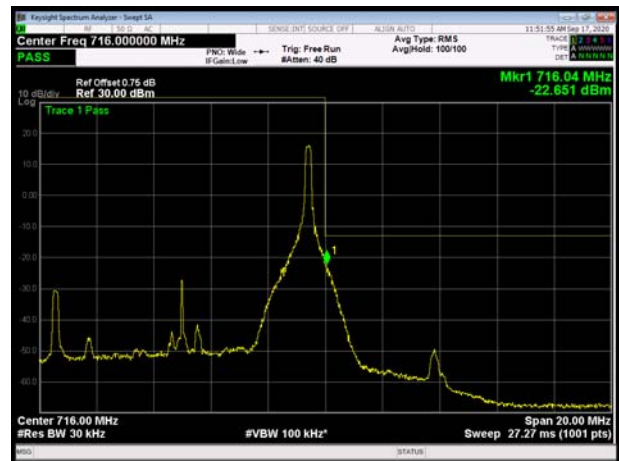
LTE Band 12 QPSK 5MHz CH-High, 100%RB



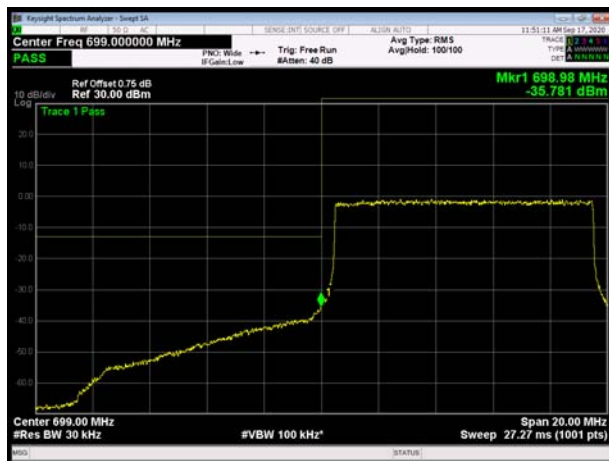
LTE Band 12 QPSK 10MHz CH-Low, 1 RB



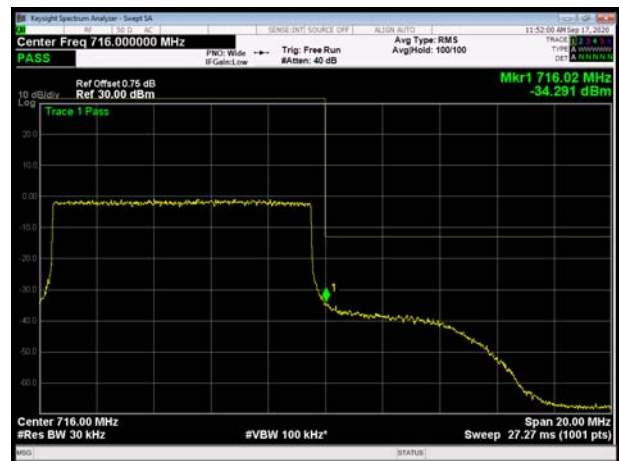
LTE Band 12 QPSK 10MHz CH-High, 1 RB



LTE Band 12 QPSK 10MHz CH-Low, 100%RB

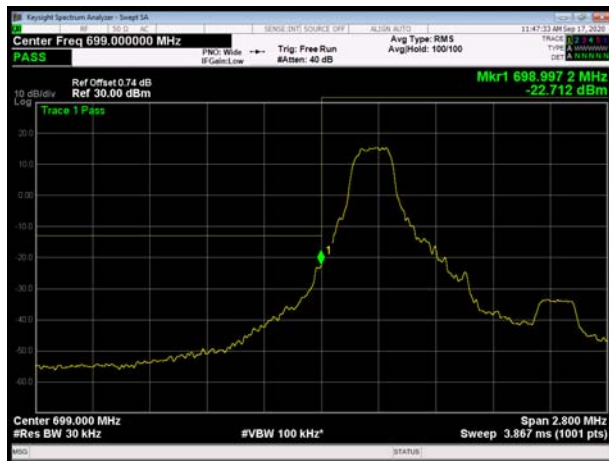


LTE Band 12 QPSK 10MHz CH-High, 100%RB

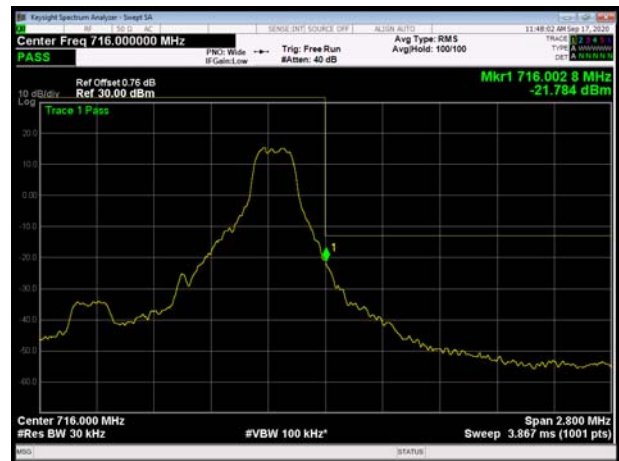




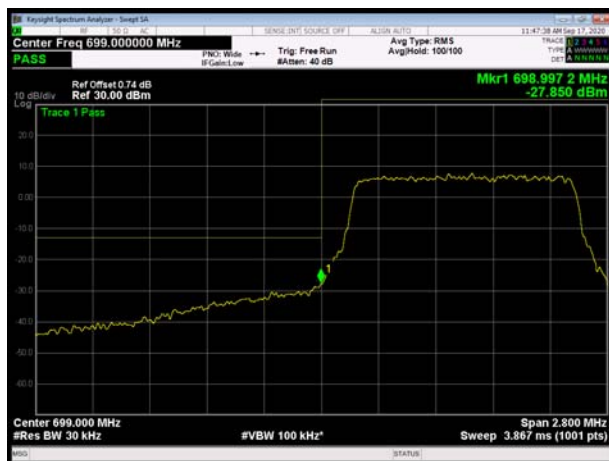
LTE Band 12 16QAM 1.4MHz CH-Low, 1 RB



LTE Band 12 16QAM 1.4MHz CH-High, 1 RB



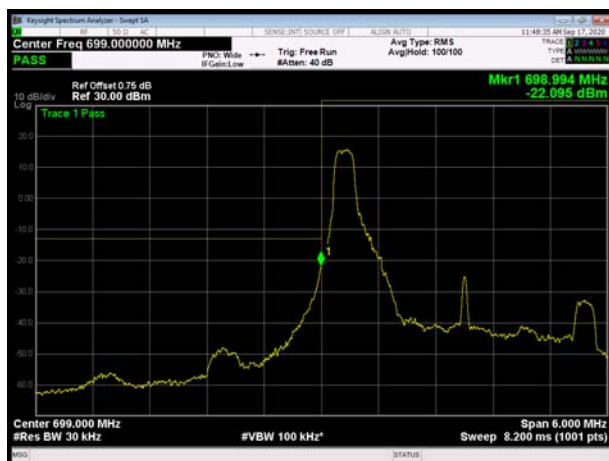
LTE Band 12 16QAM 1.4MHz CH-Low, 100%RB



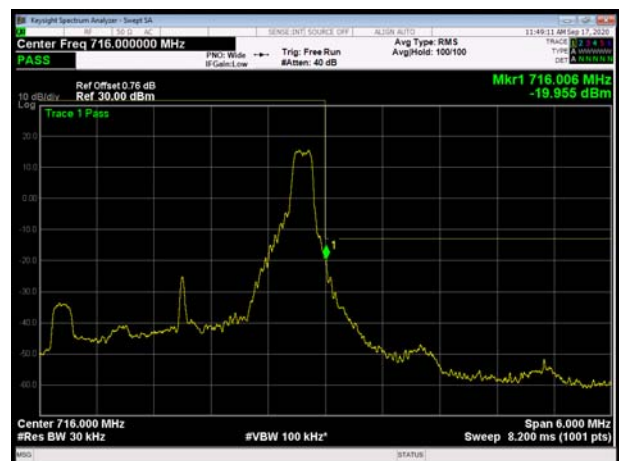
LTE Band 12 16QAM 1.4MHz CH-High, 100%RB



LTE Band 12 16QAM 3MHz CH-Low, 1 RB

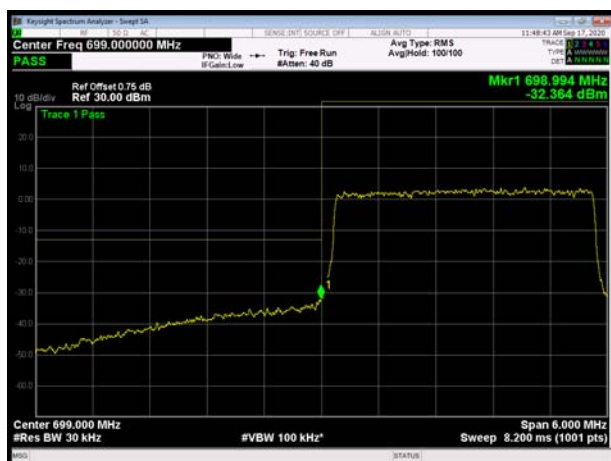


LTE Band 12 16QAM 3MHz CH-High, 1 RB

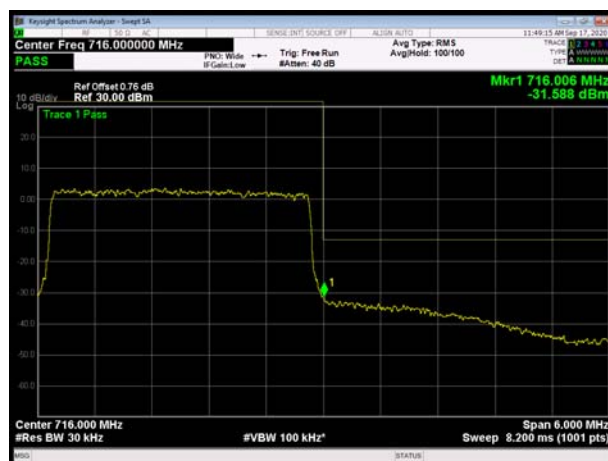




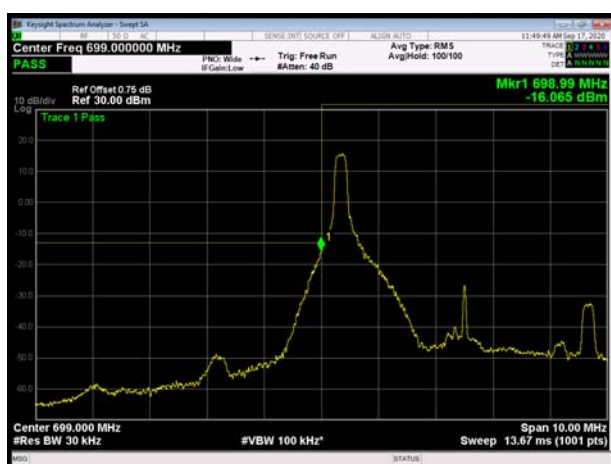
LTE Band 12 16QAM 3MHz CH-Low, 100%RB



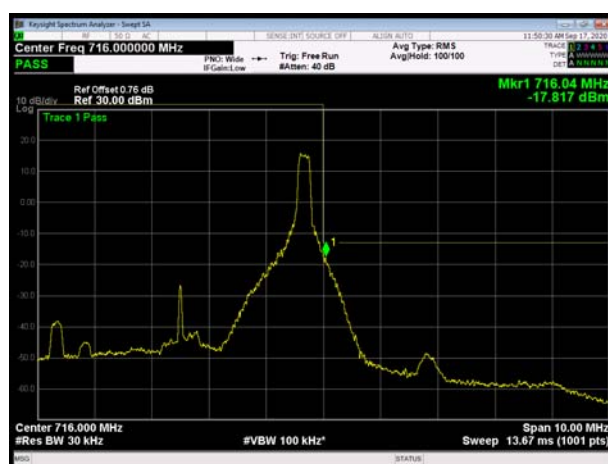
LTE Band 12 16QAM 3MHz CH-High, 100%RB



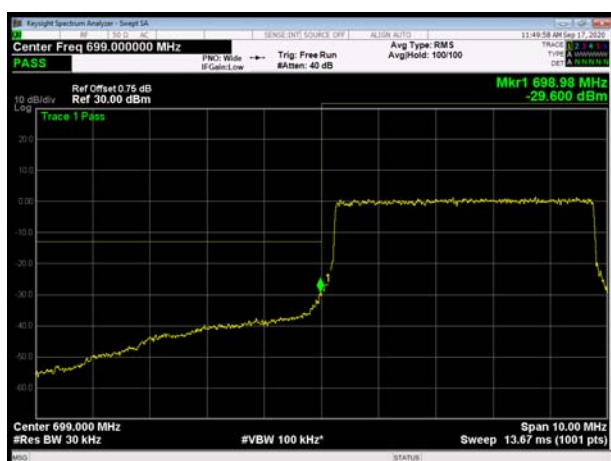
LTE Band 12 16QAM 5MHz CH-Low, 1 RB



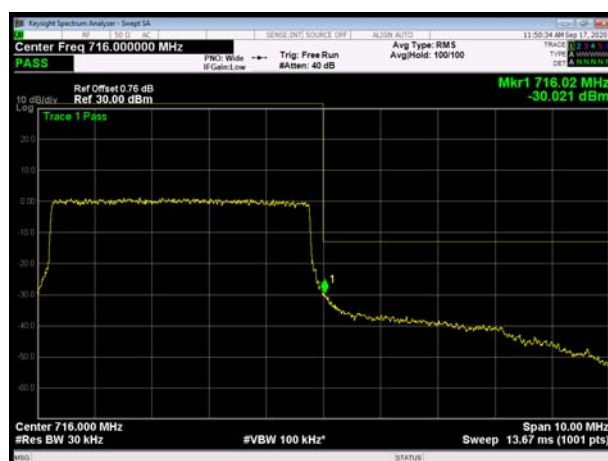
LTE Band 12 16QAM 5MHz CH-High, 1 RB



LTE Band 12 16QAM 5MHz CH-Low, 100%RB

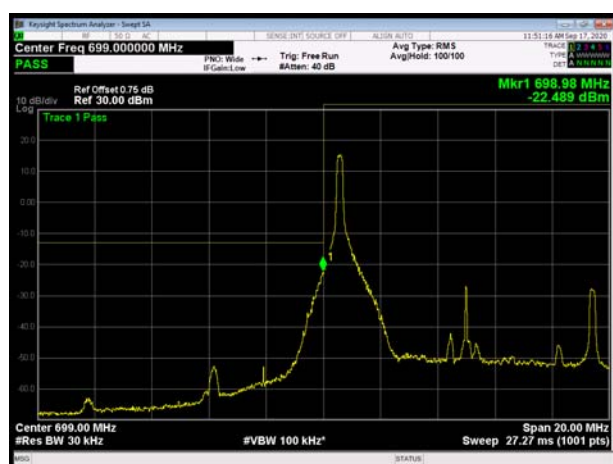


LTE Band 12 16QAM 5MHz CH-High, 100%RB

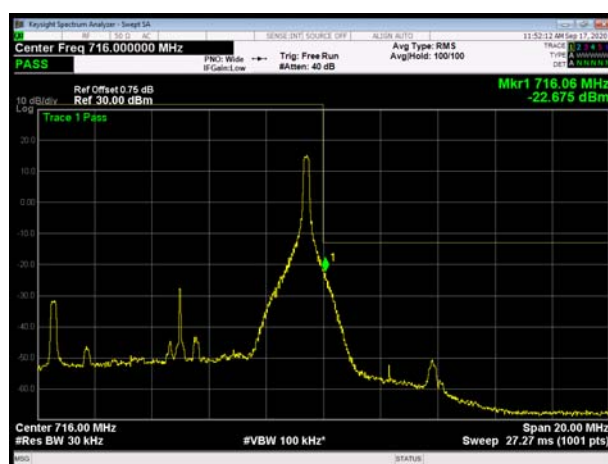




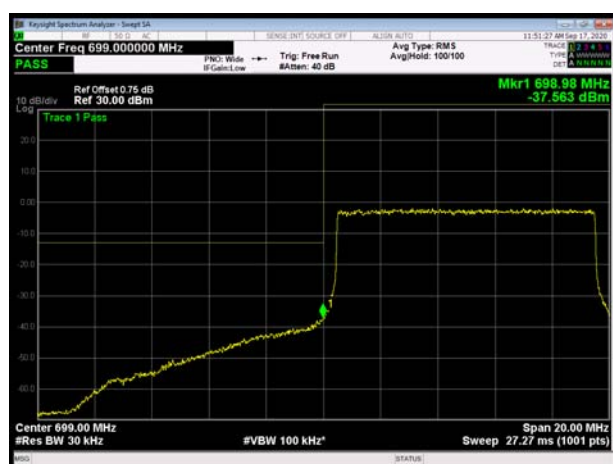
LTE Band 12 16QAM 10MHz CH-Low, 1 RB



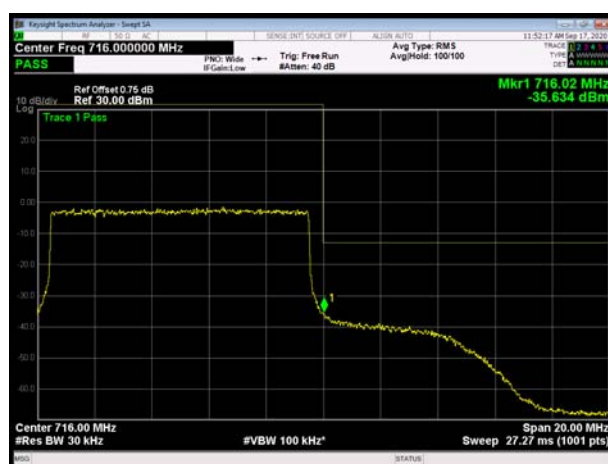
LTE Band 12 16QAM 10MHz CH-High, 1 RB



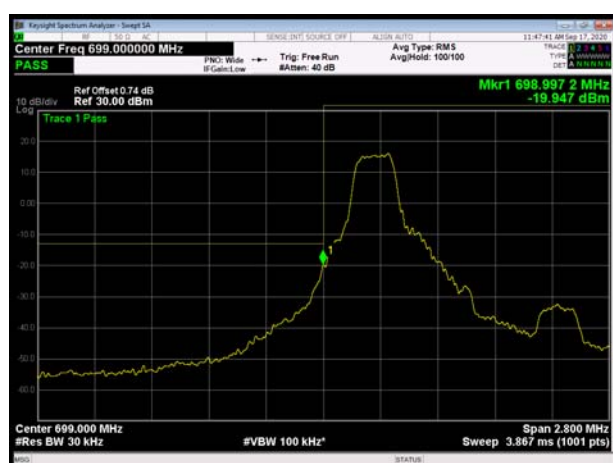
LTE Band 12 16QAM 10MHz CH-Low, 100%RB



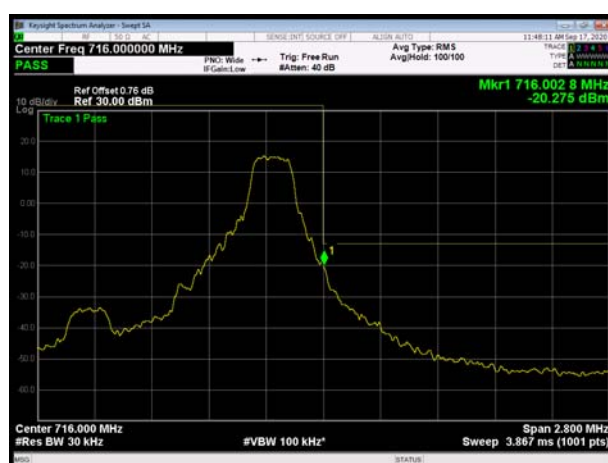
LTE Band 12 16QAM 10MHz CH-High, 100%RB



LTE Band 12 64QAM 1.4MHz CH-Low, 1 RB

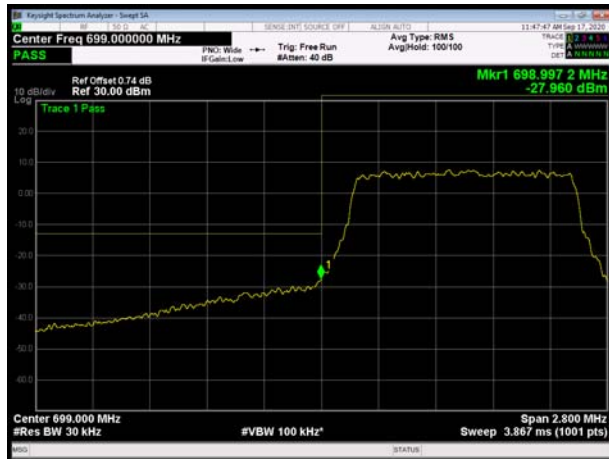


LTE Band 12 64QAM 1.4MHz CH-High, 1 RB





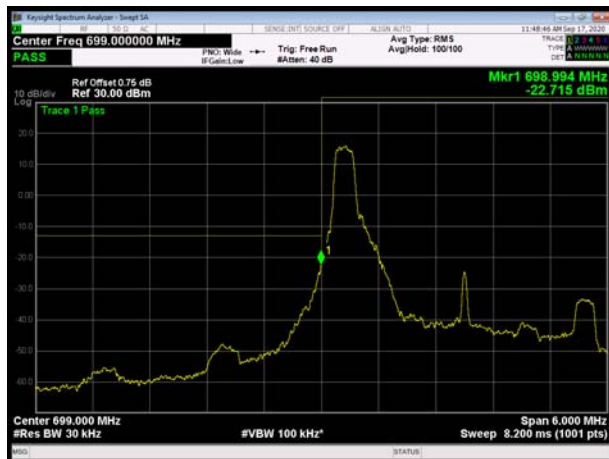
LTE Band 12 64QAM 1.4MHz CH-Low, 100%RB



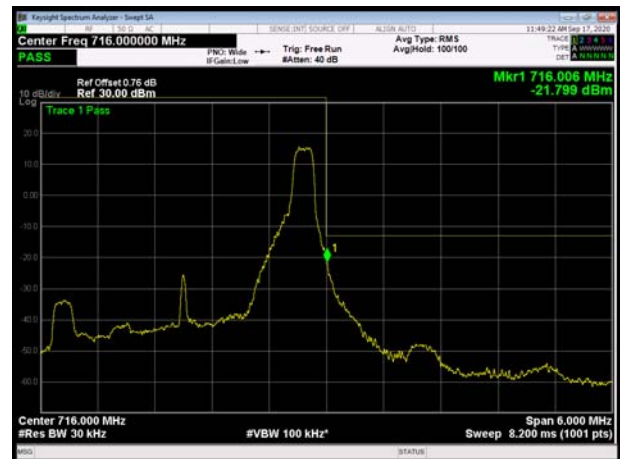
LTE Band 12 64QAM 1.4MHz CH-High, 100%RB



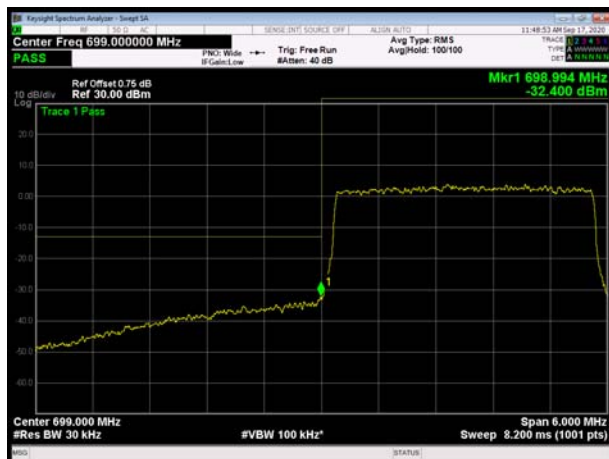
LTE Band 12 64QAM 3MHz CH-Low, 1 RB



LTE Band 12 64QAM 3MHz CH-High, 1 RB



LTE Band 12 64QAM 3MHz CH-Low, 100%RB



LTE Band 12 64QAM 3MHz CH-High, 100%RB

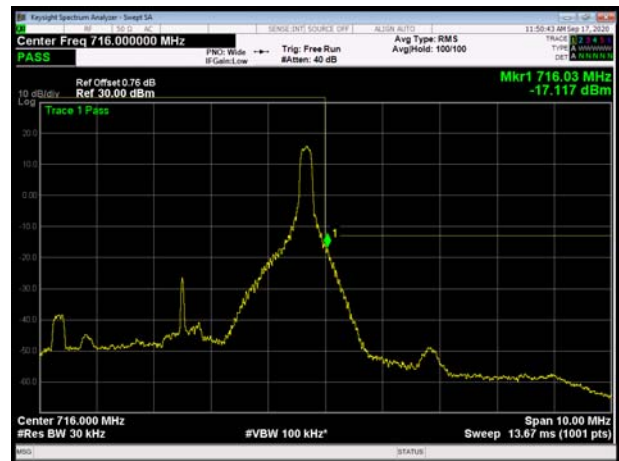




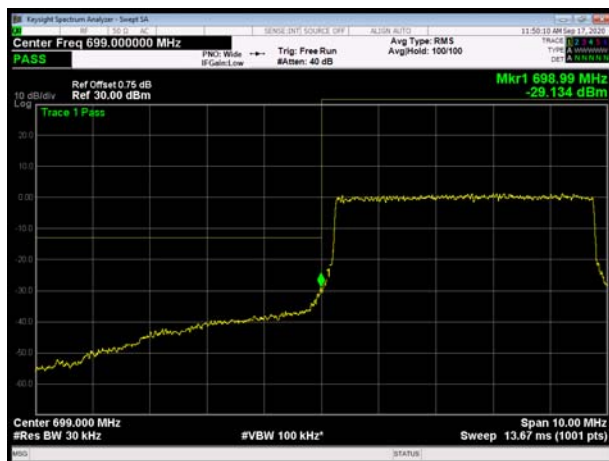
LTE Band 12 64QAM 5MHz CH-Low, 1 RB



LTE Band 12 64QAM 5MHz CH-High, 1 RB



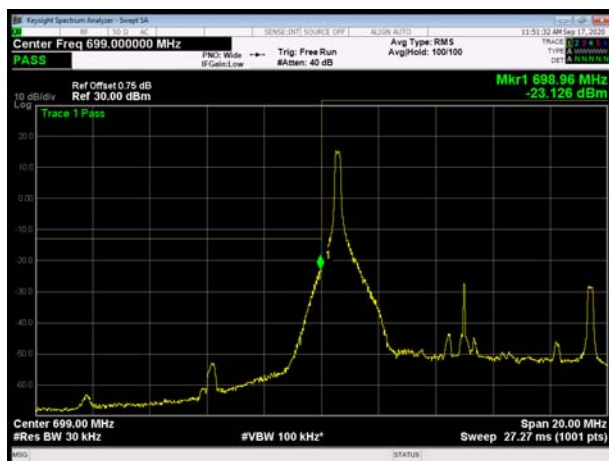
LTE Band 12 64QAM 5MHz CH-Low, 100%RB



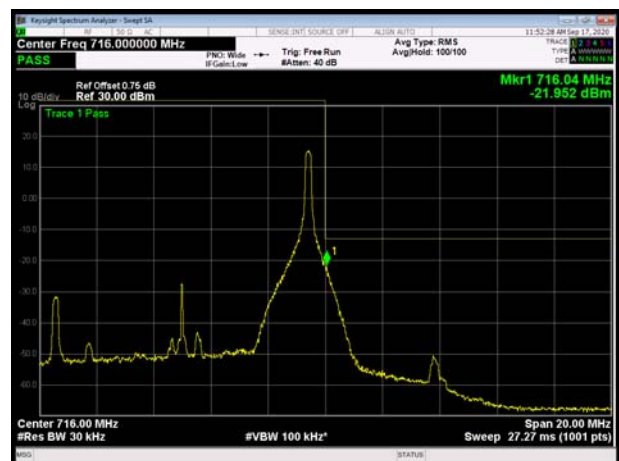
LTE Band 12 64QAM 5MHz CH-High, 100%RB



LTE Band 12 64QAM 10MHz CH-Low, 1 RB

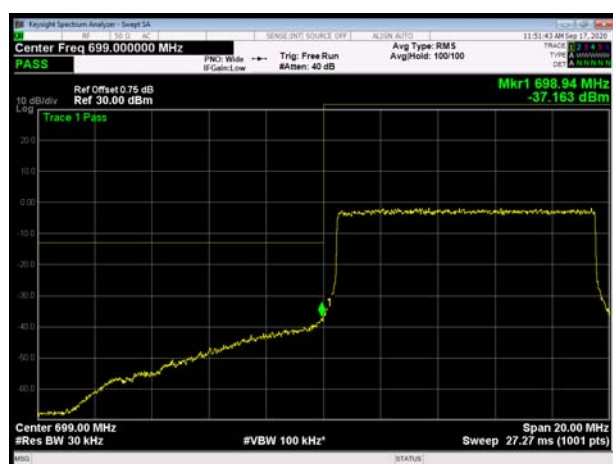


LTE Band 12 64QAM 10MHz CH-High, 1 RB

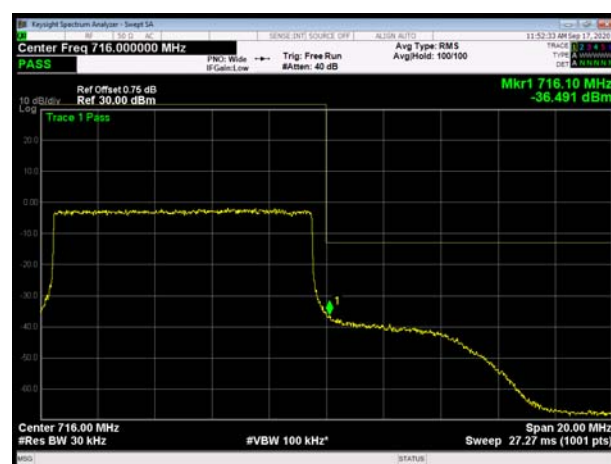




LTE Band 12 64QAM 10MHz CH-Low, 100%RB

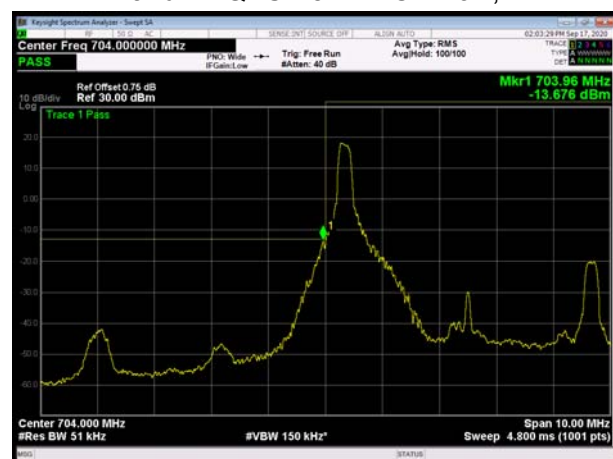


LTE Band 12 64QAM 10MHz CH-High, 100%RB

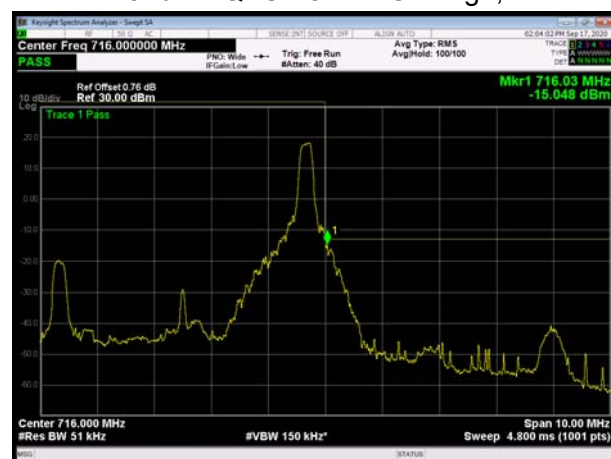


Variant

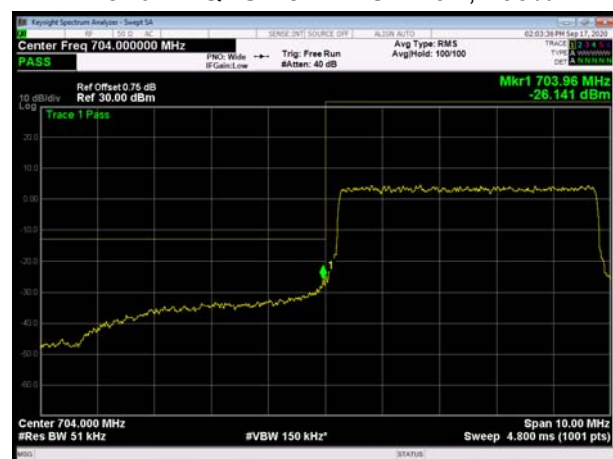
LTE Band 17 QPSK 5MHz CH-Low, 1 RB



LTE Band 17 QPSK 5MHz CH-High, 1 RB



LTE Band 17 QPSK 5MHz CH-Low, 100%RB



LTE Band 17 QPSK 5MHz CH-High, 100%RB

